

The
**AMERICAN
RIFLEMAN**

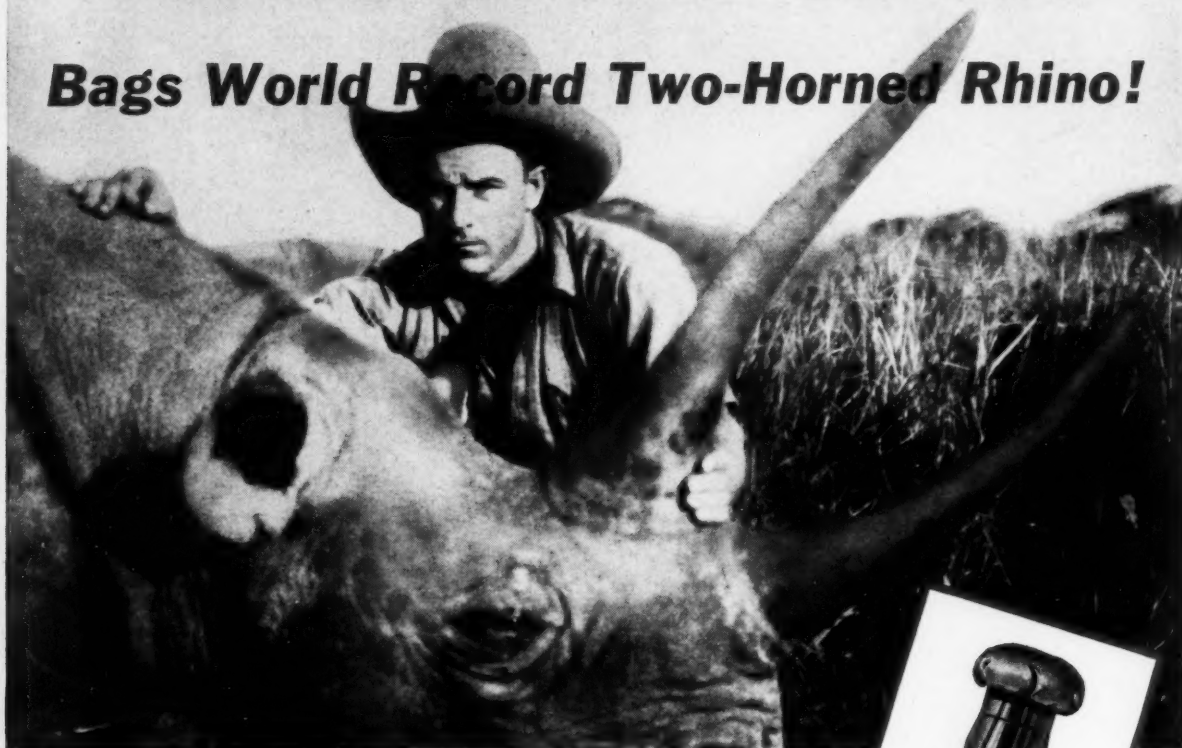


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Incorporated 1871

15 CENTS

PETERS BELTED BULLET

Bags World Record Two-Horned Rhino!



NO SECOND SHOT needed when Mike Cottar plugged this big fellow. It put the Rhino out of business . . . permanently.

THIS BULLET did the trick. Notice how the belt behind the bullet nose controls expansion . . . prevents disintegration.



Mike Cottar, professional hunter, describes experience with the *"Big Game Smasher"*

If anybody in the world knows his big game ammunition, it's Mike Cottar, safari outfitter of Nairobi, Kenya Colony, Africa. Here's what he says about Peters Big Game Smasher:

"I'm sending you the bullet that I shot into a Rhino at 100 yards. It smashed the first shoulder, went through the ribs; and lodged against the skin on the other side. A second shot was not required. . . I shot two different lions, quartering, and the bullet not only smashed up their shoulders, but put them down to stay. There's no question that the Belted Bullet does what it was intended to do. They hold up . . . hold together." Ask your dealer to show you the Peters Belted Bullet.



DOWN TO STAY. One shot is all you need when you use Peters Belted Bullet . . . you don't risk losing a coveted trophy.

PETERS



PETERS CARTRIDGE DIVISION, Remington Arms Company, Inc., Dept. K-26, Bridgeport, Conn.



HILARY BROWN

THESE four boys, top honor winners in the 1936 Open Road National Rifle Match, are among America's most distinguished junior riflemen. Brown won the 1936 N.R.A. National Junior Championship at Camp Perry, was the 1935 runner-up. Hughes won the 1935 N.R.A. Junior Championship. Chapel and Thombs were the high-score medal winners in the 1936 National American Legion Junior Rifle Matches. They have won these honors, and many others, with Winchester Model 52 Rifles and Winchester Ammunition.



ROGER HUGHES



JOSEPH CHAPEL



RALPH THOMBS, Jr.

AGAIN the Open Road NATIONAL MATCHES are WON WITH **WINCHESTER**

TRADE MARK

MORE and more popular and important year after year, the 1936 annual National Rifle Matches sponsored by the *Open Road for Boys* magazine, under the sanction of the National Rifle Association, drew a total entry roll of 7956. In both the Expert and Tyro classes, in both the Heavy Rifle and Light Rifle divisions, in both the Individual and Team matches, the leading cup and medal winners ALL shot Winchester Rifles. In the leading or Expert class these winners also used Winchester Ammunition.

EXPERT INDIVIDUALS CLASS

Cup and Medal Winners

1. Hilary Brown, Louisville, Ky. 400
2. John Jungerman, Louisville, Ky. 399
3. Roger Hughes, Youngstown, O. 399

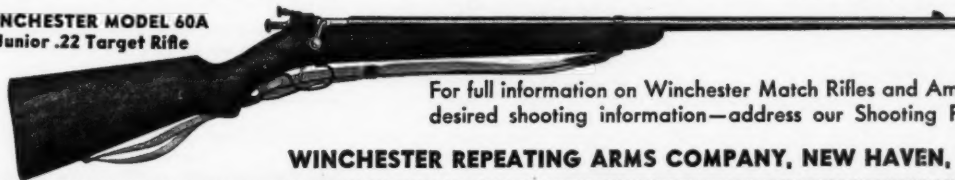
All used Model 52, 1 and 3 Winchester Precision

Runner-up Medal Winners

1. Joseph Chapel, Youngstown, O. 399
2. Ang. Westergaard, Whiting, Ia. 398
3. Ludd Johnson, Richmond, Calif. 398

All used Model 52, and 1 Winchester Precision

WINCHESTER MODEL 60A Junior .22 Target Rifle



**56 Out of all 78 Winners,
Including ALL Placed First,
Shot Winchester Rifles**

EXPERT TEAMS

Cup and Medal Winners

1. Joseph Chapel, Youngstown, O. 398
- Ralph Thombs, Jr., Canfield, O. 395
- Roger Hughes, Youngstown, O. 394

Team Score Total 1187

All used Model 52 and Winchester Precision

2. Julius J. Urban, N. Y. City 400
- Harry F. Kling, N. Y. City 394
- Robert A. King, N. Y. City 393

Team Score Total 1187

All used Model 52

Runner-up Medal Winners

All shooters on the three teams receiving awards shot Winchester M52.

TYRO INDIVIDUALS AND TEAMS

All individual match winners of cups and

medals and runner-up medals in Division I (Heavy Rifle) shot Winchester M52.

All nine Division I (Heavy Rifle) team member cup and medal winners and runner-up medal winners shot Winchester M 52. In Division II (Light Rifle) all nine shooters on the three highest teams shot Winchester Model 60A.

These are only the leading winners. Many of the lesser ones also won with Winchester Rifles. And note this—besides the 36 contestants who won prizes with the famous Model 52, America's dominant .22 target rifle, there were 20 more who won prizes with other Winchester Rifles, of lighter weight, 8 not distinctly target rifles.

What is the meaning of this universal choice of Winchester Rifles by America's rising junior marksmen—future stars in adult competition? Just this: Keenly alert to all modern advancement, with a special bent for things scientific, Young America is RIFLE-WISE in its own right, chooses for itself, and proves its choice correct!

For full information on Winchester Match Rifles and Ammunition—and any desired shooting information—address our Shooting Promotion Division.

WINCHESTER REPEATING ARMS COMPANY, NEW HAVEN, CONN., U. S. A.



RELOADER NEWS



Prepared by **HERCULES POWDER COMPANY**, Wilmington, Delaware
INCORPORATED

CAMP PERRY MATCHES RATED AS BEST EVER

Congratulations are in order for the National Board for Promotion of Rifle Practice, to the National Rifle Association, and to all others who in any way contributed to the success of the most successful Camp Perry Shoot.

This year's shoot, August 23 to September 13, was the largest and most successfully operated contest in the history of the National Matches. A decided improvement was noticed in the scores in most matches and in the number of entries. In the Wimbledon Matches there were 1986 entries—the previous high was 1640. More than 700 small bore shooters were registered.

The new buildings and improved grounds were greatly appreciated by all participants and no doubt will help to increase attendance in the future.

An interesting sidelight of the small-bore matches was the increased use of smokeless powder loads. One of the small bore team matches was won with straight smokeless ammunition. Also, the individual grand aggregate winner of small bore matches used straight smokeless.

All in all, it was a great year for rifle shooting at Camp Perry. We were glad to greet old friends and we shall be looking for you again in 1937.

CRACK OHIO TEAM WINS HERCULES TROPHY

The fair sex took their share of honors in the competition for the Hercules Trophy at Camp Perry on Friday, September 4, 1936. Of a total of 80 entries, three teams, including the winning team, placing among the first eight, had a woman member.

The Winning Team:

L. C. Barrett, Akron, Ohio - - 197
Minnie McCoy, Akron, Ohio - - 196

393

To members of winning team that scored a total of 393 x 400, 60 miniature replicas of the Hercules trophy and gold medals.

Second place was won by the team of
Elsie Hellwig, New Haven, Conn. - 197
Maj. J. W. Hession, New Haven, Conn. - - - - - 195

392

Janet Lewis, of St. Albans, Long Island, N. Y., shooting 197, finished in eighth place with her partner and brother, Tom Lewis.



L. C. Barrett and Minnie McCoy, winners of the Hercules Trophy at Camp Perry, this year.

This year the Hercules match was changed to a course of 20 shots per man at 200 yards. The other conditions of the competition—2-man team, .22 cal. rim-fire cartridges any rifle and sights, were not changed.

Hercules has booklets describing the ballistics and giving tabulations for loads for the following smokeless powders:

POWDERS	CARTRIDGES
Hi Vel No. 2	.25/3000
Hi Vel No. 3	.25 Remington
Lightning	.25/35
Sharpshooter	.270 Winchester
Unique	.30/30-.30 W. C. F.-
No. 2400	.30 Rem.
Red Dot	.300 Savage
Herco	.30-'06
Bullseye and Unique for Revolvers and Pistols	.30-40 Krag

Write for copies—there's no charge.

New High Velocity Loads for Varmint Shooting

New high velocity loads—with just the punch to "stop" varmints right in their tracks—have been worked out for the hand loader by Hercules ballistic engineers, and these new loads are described in our booklets. All loads cited give amazingly high velocity and flat trajectory without developing excess pressures.

2400 Loads for Varmints

The .22 Hornet, with a 45-grain hollow-point bullet develops a velocity of 2505 f.s. with a charge of 10.3 grains. The .25/20 Repeater gives a velocity of 2075 f.s. with 10.5 grains to a 60-grain hollow-point bullet.

Hi Vel No. 3 Loads for Varmints

HiVel No. 3, new Hercules powder, developed especially for popular sporting loads, offers some excellent loads for "varmint" shooting.

For example, the .22 Savage Hi-Power has two interesting loads—the 45-grain Hornet hollow-point bullet with a charge of 26.5 grains develops 3710 f.s., while the 70-grain soft-point bullet has a muzzle velocity of 3050 f.s. with a 22.6-grain charge.

For the .220 Swift, two loads are suggested: 46 gr. hollow-point with a charge of 33.2 grains develops 3935 f.s.; the 48-grain pointed soft point using 33.8 grains will give a velocity 3840 f.s.

The .25 Remington offers 3390 f.s. in the 60-grain .25/20 hollow-point bullet with 28.5 grains of HiVel No. 3. Another "varmint" load will be found for the .250/3000 Savage in which 28.8 grains drive the 60-grain .25/20 hollow-point bullet 3410 f.s.

An important load of HiVel No. 3 is a charge of 33.2 grains in the 110-grain hollow-point bullet for the .30 W.C.F., .30 Remington, and .30/30. This develops a muzzle velocity of 2920 f.s.

The popular .30-'06 Springfield gun takes a 50-grain charge for the 80-grain .32/20 hollow-point and develops 3680 f.s.; the .30/40 Krag with 80-grain .32/20 high-speed bullet gives 3470 f.s. with a 38.3-grain load. The same bullet for the .300 Savage develops 3650 f.s. with 41.3 grains of HiVel No. 3.

The .257 Roberts has two interesting varmint loads: 37.8 grains of powder in a 70-grain hollow-point bullet develops a velocity of 3520 f.s.; when an 87-grain hollow-point bullet is used with 36.8 grains of powder a velocity of 3320 f.s. is developed.

Hi Vel No. 2 Loads for Varmints

Several HiVel No. 2 loads can be used for "varmint" shooting with good results. In the .270 W.C.F., the 95-grain hollow-point develops 3340 f.s. with a charge of 38.8 grains. The .30-'06 Springfield takes a load of 55 grains to produce a muzzle velocity of 3360 f.s. in the 110-grain high-speed bullet. The .30/40 Krag, using the 110-grain hollow-point bullet with a charge of 41.1 grains of HiVel No. 3 develops 3040 f.s.

The .220 Swift using 35.2 grains with a 46-grain hollow-point bullet will develop 3920 f.s. velocity, while a 48-grain pointed soft-point bullet and a charge of 34.8 grains develops a velocity of 3785 f.s.

The .257 Roberts using a 70-grain .250/3000 hollow-point and a charge of 40.0 grains develops 3500 f.s. velocity, while the 87-grain hollow-point with a charge of 39.0 grains will give a muzzle velocity of 3295 f.s.

Keep some of these loads for reference, or better, send for the booklets and select the loads best suited for your rifle.

HERCULES POWDER COMPANY
INCORPORATED

980 Market Street Wilmington, Delaware
K-93

The AMERICAN RIFLEMAN

VOL. 84, No. 11

NOVEMBER, 1936

N. R. A. SERVICE

LEGISLATIVE DIVISION: Looks after the interests of the shooters in Congress and State Legislatures, carries on the organized fight against unsound anti-gun laws, encourages legislation for the aid of civilian rifle practice and assists members to obtain permits to carry firearms to and from a range in states requiring such permits.

THE AMERICAN RIFLEMAN: This magazine is the official monthly publication of the N. R. A., and as such is "The Voice of the N. R. A." Non-political and non-sectarian in policy and free from commercial domination, it can and does speak freely, frankly and with authority on all shooting matters.

TECHNICAL DIVISION: Helps members with their personal shooting problems, reports in *THE AMERICAN RIFLEMAN* each month practical tests and critical examinations of new guns and equipment, and gives by personal letter advice on the selection of the right gun for a specific purpose, reloading, restocking, etc.

CLUB SERVICE DIVISION: Assists shooters in organizing local rifle and pistol clubs, furnishes detailed diagrams for the construction of regulation indoor and outdoor ranges, suggests a varied program and competition to keep up the interest of members, and generally assists affiliated units by passing along the successful experiences and ideas of other clubs.

MEMBERSHIP EXTENSION: Operates as a service division by furnishing members with sales literature and printed information so that they may explain to fellow sportsmen the value and benefits of N. R. A. membership and, moreover, because increased membership means an extension of N. R. A. service, it serves to benefit members in this way.

COMPETITIONS DIVISION: Conducts a year-round program of home-range matches in which members may win distinctive medals while practicing at home with rifle and pistol, aids state associations and civilian clubs in planning and conducting regional, state and local shooting matches, and gives members helpful personal advice on their individual target-shooting problems.

JUNIOR DIVISION: Provides individual and club memberships for junior shooters, boys and girls alike; conducts a year-round program of competitive and qualification shooting, and teaches Young America how to handle firearms safely and properly. No father should hesitate to support its good work.

POLICE DIVISION: Assists police departments in marksmanship training of their officers. Through the Association's far-flung contact and with the aid of experienced hands to carry on the work, this division is performing a public service which warrants the support of every good citizen.

PUBLICITY DIVISION: Endeavors to educate the American public through the public press to the fact that the man who likes to shoot is not a criminal and, although its services are intangible in character, it represents an important chain in the campaign "to make America, once again, a Nation of Riflemen."

Officers of

THE NATIONAL RIFLE ASSOCIATION OF AMERICA

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Courtesy of Marshall F. Mathis, Warren, Pa. Shows Mr. Mathis with wolf shot in Ontario during 1935 fall hunting season.

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POWDER SMOKE

The Challenge of Open Season

AUTUMN woods ablaze with color: autumn fields stubble-browed and corn-shocked; autumn marshes, water steely gray, yellow-brown grasses trampled into damp black earth; hunting dogs, wistful-eyed, whining eagerly to answer the whispered call of the wind in the pines; gun oil, saddle soap, sleeping bags, diamond hitches—OPEN SEASON!

And this season, as every season, guns will be taken afield by men who handle them only once a year. Worse still, guns will be borrowed and rented by "hunters" who have never shot before. There will be guns with "safeties" that are not safe; guns with soft and worn sears, and triggers that pull from a quarter pound to six or seven pounds; shotguns that do not fit, and rifles that have not been sighted-in, in both of which cases the center of impact of the charge on a hurried shot utterly unknown to the man who is shooting. Men who have all the instincts of fine sportsmen—intelligent, careful men in the ordinary walks of life, BUT UNTRAINED IN THE USE OF FIREARMS, will gamble their lives and the lives of their companions *without realizing what they are doing!*

Members of the National Rifle Association, officers of rifle and gun clubs, you have during this month of November the opportunity *and the duty* of educating your friends and your community to the fact that ACCIDENTS IN THE HUNTING FIELD DO NOT HAPPEN—THEY ARE CAUSED! They are caused by carelessness and by ignorance.

That type of hurried shot at some commotion in the brush which results in the maiming of a fellow hunter is almost

always due to a lack of confidence on the part of the shooter. Unfamiliar with his gun, untrained in its use, realizing his poor marksmanship, fearful that if he waits the game will move far enough away to cause a miss, he does not wait for a clear view of his target—and lives the rest of his life in regret.

There are enough trained men and enough rifle, trap, and skeet ranges in America to handle the elementary training of all those who will go afield during this open season: to check over the mechanism of their guns, help sight them in, impress the rules of safety, and give an hour or two of practice and coaching in *accurate shooting*.

What of it if a match or two must be cancelled or postponed—are not human lives worth it? What of it if match targets, "incomers," standard speeds of "birds," must be discarded for the time, and things set up that the *tyro* can see and can hit? Human lives are worth it!"

And from the purely selfish standpoint, you need more members, more public interest and support. Is there any better way to get it? Every newspaper, every civic club in America, is interested today in SAFETY! Much of the agitation against guns and gunners is due to hunting accidents!

The trail to public service and to personal service is in this case one and the same. It is clearly defined. Waste no more time—follow it this open season. Too long have you waited to let someone else do it. That "someone else" can think of only one solution—anti-gun legislation.

The **AMERICAN RIFLEMAN**

NOVEMBER, 1936

Experiences with the .22-3000 Lovell

By HENRY E. DAVIS

IN MY last article, dealing with the .22 Hornet, I stated the requisites of the ideal cartridge for use on vermin and medium game in settled communities, at ranges up to 200 yards and slightly over. These were: gilt-edged accuracy, flat trajectory, constant zero, ample killing power without undue mutilation, absence of recoil, mild report, freedom from ricochets, and low cost per shot. Based upon long and varied experience in the field, I gave it as my deliberate conclusion that, excellent as it is in many respects, the .22 Hornet can not qualify as such ideal cartridge. On the other hand, I expressed the opinion that the .22-3000 Lovell or Super-Hornet, made by necking-down the .25-20 Single Shot case, more nearly attains to the standard set for such ideal cartridge than any other we have today. Now for the facts upon which such opinion is founded.

My interest in the Super-Hornet cartridge began with its first announcement in May, 1934, and I immediately had built on the Sharps-Borchardt action a heavy rifle to handle it. My experiences with this rifle in the field were reported in detail in an article appearing in *THE AMERICAN RIFLEMAN* for December, 1934. Since that time I have continued to use the cartridge in my original rifle as well as in several others, and the more I use it the more I like it. This rifle has a heavy 28-inch barrel, weighs 10 pounds 9 ounces without the scope and sling, and is tightly breeched and tightly chambered to take the cartridge of the dimensions as originally adopted by Lovell. These dimensions are: overall length of empty case, 1.625"; length from beginning of shoulder to mouth of case, .531", of which .156" is shoulder and the remaining .375" is neck. In other words, the design calls for a case with a rather long neck and a short shoulder.

When I first obtained this rifle, in July 1934, I developed for it two loads, and these have proven so satisfactory that not until this summer have I even attempted to develop any others. These are 13 grains of No. 1204 powder behind the 45-grain soft-point Hornet bullet, and 12.5 grains of No. 1204 powder behind the Sisk 55-grain soft-point Hornet bullet.

Though rather expensive at the outset, it is my practice to devote a particular telescope to a particular rifle if such rifle is to be used regularly and to any extent; and such a course pays

dividends both at the target and in the field. For example, the Lyman 5A scope assigned to my Model 54 Hornet is never changed to any other rifle, and this largely explains this rifle's uniformly excellent performance. So when I got the heavy .22-3000 Sharps I assigned a new Lyman 5A scope to it, and this scope remained with it for nearly two years. During this period the scope was frequently removed from and replaced on the rifle, but apparently without any bad effect, as the rifle held its zero constantly.

In the summer of 1935 this particular scope was used to test out a .22 Niedner Magnum on a Winchester Single Shot action, which required no change in the position of the mounts but only changes in the readings for windage and elevation. After testing the Magnum the scope was returned to its case, and a few weeks later I took it out, reset the rear mount to my original readings for the .22-3000 Sharps, and replaced the scope on it. I then fired three shots at a 100-yard target, and found it was absolutely right. Without firing another shot, I put the rifle in the car and started on a vacation trip extending through North Carolina, Tennessee, Virginia, and West Virginia. On this trip it saw service a-plenty, and its performance was well-nigh perfect.

Regardless of its accuracy when all conditions are right, a cartridge that frequently changes its center of impact is not satisfactory in the field. Confidence in your rifle is one of the essentials of good shooting, and what confidence can be placed in a cartridge that is as fickle as a flapper? There is nothing more exasperating than miss after miss on game or vermin when you know you are holding right and that such misses can be explained only by a change in zero of the rifle you are shooting. Few of us have either the time or the opportunity to check the sights of a rifle before taking it on a long automobile trip; and yet if you neglect taking such precaution with the average .22 Hornet, you had just as well leave it at home, as the chances are at least even that it will fail you in a pinch. This I know to be true from actual experience with several Hornet rifles. On the other hand, whenever I have shoved the muzzle of that old Sharps .22-3000 out of the car window, I have known that I could count on a kill if the game was within 200 yards and I

held properly. In my judgment, herein lies the first great advantage the .22-3000 has over the .22 Hornet.

It is true the accuracy of the .22 Hornet is phenomenal, but in my opinion not more phenomenal than that of the .22-3000. I now own the Sharps-Borchardt .22-3000 rifle that made the remarkable groups shown in the issue of *THE AMERICAN RIFLEMAN* for May, 1934. It is equipped with a 30" barrel having a diameter of .94" one-half inch in front of the receiver, and a straight taper to a diameter of .732" at the muzzle. I have fitted it with a new tight extractor, reduced the trigger pull to three pounds, and installed a new scope stock of Monte Carlo pattern, with Howe cheekpiece, and a new long, full fore-end, both of fine Circassian walnut; and as

the largest ten-shot group of the entire lot was just 2 inches. No Hornet I have tested has ever equaled, much less surpassed, these performances. At best I am only a fair rest shot, and if this rifle so performs for me, what would it do in the hands of a real expert! It is only fair to say, however, that when he sold it to me, Mr. Bell, the original owner, wrote that he (an ex-army sergeant) had tested for Mr. Lovell a number of rifles in this caliber and that this was the most consistently accurate of all he had ever shot.

This rifle was apparently chambered with the same reamer as my first Sharps, as it takes cases of exactly the same dimensions. The groove diameter of the barrel, however, must be greater, as it handles heavier charges of No. 1204 pow-

brought to bag. I am certain that the chuck at 225 yards was missed clean, but I am not at all sure that the other two not bagged were not actually hit. All of this shooting was with the load consisting of the 45-grain soft-point bullet and 13 grains of No. 1204 powder.

In the autumn of 1935 I learned from Mr. Lovell that he had changed the shape of the .22-3000 case so as to make it hold more powder. This change was in the length of the slope, which was increased from .531" to .562", this being divided equally between the shoulder and the neck. The result is a case with shorter neck and greater symmetry. This case is now the standard, and is shown in detail in the issue of *THE AMERICAN RIFLEMAN* for June, 1935.

Mr. Lovell also wrote me that he was getting best results with this cartridge in single-shot rifles with heavy barrels of .223" to .224" groove diameter and 20" twist, as such boring permitted the use of cartridges carrying much heavier charges of powder. Thereupon I had him make up such a rifle on a Winchester Single Shot action, using a

Where the crows nest

very heavy 28-inch Diller barrel, the complete rifle weighing 12¼ pounds without scope, sling, and sights. About the same time I procured and sent to him a new standard Winchester Model 54 rifle in the .22 Hornet caliber, with instructions to chamber it for the .22-3000 cartridge. I also had him furnish a case-reducing die to be used with both rifles.

The recommended charge for the big Single Shot was 16.2 grains of No. 1204 powder behind the 45-grain bullet, and this filled a Remington case nearly to the brim. When he returned the Model 54 to me Mr. Lovell wrote stating that from his tests he believed I could go the limit in loads for it. So I set about to develop accurate loads for each of the rifles. The Single Shot was found to handle 16.2 grains of No. 1204 powder all right, but it was also found that it performed best with a load of 15.5 grains of No. 1204 behind the 45-grain soft-point bullet. I did not keep it long enough to work out a suitable load for the 55-grain bullet. No maximum loads were tried in the Model 54, but it handled the 15.5-grain load without any trouble. However, it was found after repeated tests that a load consisting of 15 grains of No. 1204 powder and the 45-grain soft-point bullet was

thus equipped it weighs 9 pounds 10 ounces without the scope and sling. Just now I have in my cabinets nearly thirty fine rifles of exceptional accuracy, many with the very best hand-made barrels, and I would be willing to stake this particular Sharps against any one of them in a match.

After I had sighted the rifle in with a Fecker 4.5X target scope I fired at 100 yards five shots for a group, and they all went well into 1½ inches. This was with a sandbag rest on a shooting table. A few days later my brother, using the prone position, fired from it at 100 yards five shots for a group, and although a high wind was blowing the rifle put all of them into a ¾" circle. Subsequently I tested it again at 100 yards with the same Fecker scope, and it put the first ten shots into a 1 7/16" circle, and the next ten in a 1¼" circle, which really meant a twenty shot group of less than 1½". On a later occasion I fired at 100 yards forty-five consecutive shots with it, using four different test loads, and

der; and it performs best with Remington cases, which are thinner than those of other makes and require neck sizing in order to hold the bullets. Its standard load as developed by Mr. Bell consists of the 45-grain soft-point bullet backed by 14.2 grains of No. 1204 powder, but it shoots equally as well with a load of 15.5 grains of HiVel No. 3 powder behind the 45-grain soft-point bullet, and a load of 14.8 grains of No. 4198 powder behind the 55-grain round-nose soft-point Sisk bullet. The unusual accuracy of this rifle with such a comparatively light barrel is a tribute to the efficiency of the Sharps-Borchardt action, and especially to its method of attaching the stock by a heavy draw-bolt passing through it lengthwise.

As stated, I took with me on my vacation trip last summer my original heavy Sharps rifle in this caliber, and with it did the most of my woodchuck shooting. This rifle was fired twenty-two times at chucks over ranges varying from 50 to 225 yards, with the result that nineteen chucks were

much more accurate, so the heavier load was discarded in favor of it. I shot the big Single Shot against the Model 54 on several occasions, and found no great difference in them. Each was extremely accurate, but the excessive weight of the Single Shot was a nuisance. Really I could not see what use I had for such a heavy rifle when I had one of eight and a half pounds that would do the same work just about as effectively. In fact the lighter rifle, since it would handle the same loads, was more desirable in every way. It had a better action, and was of ideal form as a hunting arm. Hence I sold the big Single Shot, and I am glad to say the purchaser advises that he is more than pleased with his purchase. With it I furnished a batch of the 15.5-grain loads, and he writes me that these gave him 3" groups at 200 yards.

The Model 54 has now been fitted by Sedgley with a good magazine, and it has the scope bases installed, one on the rear bridge of the receiver and the other on the barrel. It is still equipped with the factory stock, but ere long I expect to replace this with a fine

The home of the wood duck

French walnut stock that will be an exact duplicate of the one on my Model 54 Hornet. When this is done I shall have certainly the most handy, if not the very best, .22-3000 rifle in existence.

At the opening of the hunting season in September 1935, I lent my brother my original Sharps in this caliber for use on vermin, and he and a friend shot it steadily for several months. In their hands it accounted for well over a hundred hawks and crows, and one wild goose, the most of these at fairly long ranges. The loads used were 13 grains of 1204 powder and the 45-grain soft-point bullet, and 12.5 grains of 1204 powder and the 55-grain soft-point Sisk bullet; and no difference was noted in their performance. The scope adjustments were in no way changed from my previous setting, which caused the bullets to strike one inch high at 100 yards; but the scope was allowed to remain on the rifle continuously. Both of these riflemen are exceptionally good shots, and a red-tail hawk within a range of 250 yards on which either of them trained this rifle, stood a slim chance of escape; and they reported many kills at even greater ranges with the same scope setting. On one occasion one of them killed seven hawks dur-

ing a short automobile ride before breakfast. So enthusiastic were they over the effectiveness of this rifle that I did not have the heart to take it back until the hawks had migrated in the spring of this year. Next season will find each of these enthusiasts equipped with a rifle of his own to handle this cartridge.

Just now in this section, crows—both common and fish—are quite busy ruining watermelons, and I have received numerous invitations from farmer friends to assist in putting an end to their depredations. Both Sharps rifles in this caliber have been called into service in this warfare, and so far honors are even, as with each I have picked a crow off the top of a dead pine nearly 250 yards away. The scope on each rifle was set to give a group

setting was not changed at any time.

In the early summer of 1936 I decided to determine, if possible, the very best loads for this cartridge. Before beginning my tests I got the views of Mr. J. Bushnell Smith and Mr. F. C. Ness, and I already had those of Mr. Lovell. After assembling the information, I next procured a supply of the latest powders, bullets, cases, and primers. Lest I forget it, permit me to say here that the best primer for this case is the Remington No. 6½ noncorrosive and nonmercuric. When it comes to ignition, the Winchester 116 is equally as good, but it is *too small*, and is liable to drop out of a case that has been fired one or more times. On account of this fault I no longer use it.



center two inches high at 100 yards.

For the present, the converted Winchester 54 has been laid aside until it can be restocked, as the comb of the factory stock is too low for the steadiest holding with a scope. Despite this defect, however, I have had excellent results with this rifle in the field. My note book records three crows killed in succession with it at 225 yards during one morning in March of the present year, and four hawks at 75 yards in one morning in the same month. On another occasion a friend was traveling with me in a car, and with this rifle I laid a crow out on the ground at a range of over 200 yards, while he smashed two red-tail hawks at ranges in excess of 150 yards. He became so enthusiastic as to declare this Model 54 the best rifle he had ever had in his hands, and I may add he is no ordinary rifle shot. The load used in the Model 54 on all of these occasions consisted of 15 grains of 1204 powder and the 45-grain soft-point bullet, and the scope

For the tests I had my two Sharps-Borchardt rifles and the converted Model 54 Hornet above described, and in addition I procured the loan of a heavy Winchester Single Shot, all being chambered by Lovell. The two Sharps rifles have the old-style chamber, while the two Winchester have the new standard chamber. The Winchester Single Shot is equipped with the heavy Savage Hornet barrel cut to a length of 28", with a diameter of 1" at the receiver and .856" at the muzzle, the entire rifle weighing, without sights and sling, 10 pounds 4 ounces. The groove diameter of this barrel is .2225".

For these four rifles I made up many test loads with various powders and the 45-grain bullet, but with the 55-grain bullet used No. 4198 powder alone. In the course of the tests hundreds of rounds were fired, all of which was done on a shooting table with sand-bag rest. The loads recommended by Mr. Smith were 15, 16, and 17 grains, respectively, of Hi-Vel. No. 3 powder behind the 45-grain

soft-point bullet, and 15, 15.5, and 16 grains, respectively, of No. 4198 powder behind the 55-grain Sisk bullet; but he stated frankly that he had not tried No. 1204 powder. I was not able, however, to experiment with the maximum charges so recommended, as none of the cases of my four rifles would hold such quantities of powder. My first efforts were to find the best loads for each rifle, and after this was done ten of each were made up and all were subsequently fired at one sitting with the same scope setting so as to determine the relative points of impact of each at 100 yards. The following tables list the most accurate loads and show the center of group of each at 100 yards as measured from the center of the bull.

FIRST SHARPS-BORCHARDT

Charge grains	Powder	Bullet grains	Center of group
13	1204	45 s.-p.	2.5" high
12.5	1204	55 s.-p.-Sisk	2.5" high
12.8	1204	55 s.-p.-Sisk	3" high
14	HiVel No. 3	45 s.-p.	2.25" low
15	HiVel No. 3	45 s.-p.	0
13	4227	45 s.-p.	1" low
14	4198	55 s.-p.-Sisk	1.6" high

SECOND SHARPS-BORCHARDT

Charge grains	Powder	Bullet grains	Center of group
14.2	1204	45 s.-p.	0"
15.5	HiVel No. 3	45 s.-p.	.75" high
14.8	4198	55 s.-p.-Sisk	2" high

WINCHESTER MODEL 54

Charge grains	Powder	Bullet grains	Center of group
15	1204	45 s.-p.	5" high
15.8	HiVel No. 3	45 s.-p.	0"
14.8	4227	45 s.-p.	0"
14.8	4198 (Peters cases)	55 s.-p.-Sisk	0"
15.2	4198 (Win. cases)	55 s.-p.-Sisk	0"

WINCHESTER SINGLE SHOT

Charge grains	Powder	Bullet grains	Center of group
14	1204	45 s.-p.	0"
15.5	HiVel No. 3	45 s.-p.	0"
15.8	HiVel No. 3	45 s.-p.	1.5" high
14.8	4198	55 s.-p.	2" high

A few experimental loads of No. 2400 powder with the 45-grain bullet were tried, but the accuracy proved so poor that tests with this powder were discontinued.

Taken as a whole, the smallest ten-shot groups were made with HiVel No. 3 powder. In the converted Model 54, 15.8 grains of it with the 45-grain soft-point W. R. A. Hornet bullet proved exceptionally accurate, and decidedly better than 16 grains. On account of its coarse granulation, the charges for all of its loads were carefully weighed on a pair of Fairbanks No. 3054 scales so as to secure absolute uniformity. While accurate, I can not say it will give the most satisfactory loads in this cartridge. The difficulty, as I see it, is to get enough of it into a case to give the most power and the greatest accuracy without excessive pressure. Take, for example, the heavy Sharps rifle. Its

maximum charge of 1204 powder with the 45-grain bullet, that will permit proper extraction of the fired cases, is 13 grains, and at 100 yards this load strikes nearly five inches higher than does a load of 14 grains of HiVel No. 3 with the same bullet; and the same relative position is maintained at 150 yards. The maximum load of HiVel No. 3 powder tried in this rifle was 15 grains, and it still shot two and one-half inches lower at 100 yards than did the load of 13 grains of No. 1204 powder. The lighter Sharps rifle gave a slightly higher point of impact with 15.5 and 15.8 grains of HiVel No. 3 powder than it did with its standard load of 14.2 grains of No. 1204 powder, but I am sure that the charge of No. 1204 can be increased so as to offset this. In the converted Model 54 a load of 15 grains of No. 1204 and the 45-grain bullet consistently strikes higher than does any load I have tried of HiVel No. 3 with the same bullet, and 15 grains of No. 1204 powder is by no means the maximum charge this rifle will handle. The table shows the loads of HiVel No. 3 as giving higher points of impact in the Winchester Single Shot than did the load of 14 grains of No. 1204, but I know this rifle will handle heavier charges of No. 1204; so this does not prove anything.

While it may be slightly more accurate, which is doubtful, I do not consider HiVel No. 3 powder as satisfactory as No. 1204 powder in this cartridge. It is not as cool burning, and in my opinion will not give as high velocity with safe pressures. These heavy 20-inch-twist barrels handle 16.2 grains of No. 1204 with impunity, and the case will not take any charge of HiVel No. 3 that will equal this in power. So I am inclined to agree with Mr. Lovell that No. 1204 is the best powder with this cartridge, at least with 45-grain bullets.

The new powder No. 4227 is so similar to No. 1204 that I spent but little time with it, so can express no opinion regarding it.

With the 55-grain Sisk bullets the new powder No. 4198 seems to be all that can be desired. The best loads fill the cases nearly, if not quite, full, and the powder has to be packed down when the bullet is seated. No ill effects appear to come from this, however, as pressures are normal and the accuracy superb.

The overall length of the loaded cartridge as recommended by Mr. Lovell is 2.05", but I am inclined to agree with Mr. Smith that the very best results will come from fitting the cartridge to the individual gun. This can be easily done by inserting a bullet in the mouth of an empty case, and then completing the seating by inserting the cartridge in the chamber of the rifle and closing the action. A gauge should then be made from a strip of sheet copper or iron by cutting out a section

from one side that is the exact length of this test cartridge, and this gauge should be kept as a check by which to set the loading tool.

In this cartridge the 45-grain soft-point bullet is extremely destructive to flesh, hence is not adapted for use on wild turkeys. Already I have been experimenting with loads for use on such game, but so far have reached no decision. It is very likely that I shall finally settle upon a 55-grain non-expanding bullet driven by No. 4198 powder.

I have also in mind a good squirrel load for this cartridge, and have done considerable experimenting along this line. Six grains of No. 80 powder with the 45-grain round-point Velo-dog bullet—which has to be sized in a B. & M. tool—gives around one inch groups at 50 yards, but strikes three inches low with the scope set to strike one inch high at 100 yards with the long-range load. The most promising low-powder load tried so far consists of 7½ grains of No. 80 powder and the 35-grain full-jacketed Sisk bullet, as with the long-range scope setting described it shoots practically to center at 50 yards, and is fairly accurate. Unlike the .22 Hornet, light loads of No. 1204 powder behind the 35-grain full-jacketed bullet do not work well in this cartridge.

With the Model 54 in this caliber furnished with turkey and squirrel loads of extreme accuracy, in addition to its regular full-power loads, I would have a rifle with which I would do the most of my hunting during the concurrent running of the deer and turkey seasons. Of course many will smile and pity my ignorance when I say I would not hesitate to shoot a deer with this cartridge. Well, perhaps I am ignorant; but I have been hunting deer just forty-five years in a country where they abound, and during this long span I have seen hundreds of them killed with buckshot, and many of these with a single buckshot at that. With one buckshot through his spine, I once dropped in his tracks a big buck running at 65 paces, and many another hunter of my acquaintance has performed similar feats. In my closet stands now an old .38-caliber muzzle-loading percussion rifle that was the property of the best deer hunter that ever lived in these parts, and I have been told that it accounted for many a buck in his hands; and I am certain it has nothing like the power of the 55-grain load of the .22-3000. I know all about the vitality of a white-tail buck, as I have seen it demonstrated time and again, but a properly placed shot from a rifle of moderate power at reasonable range will put him down to stay. Poorly placed shots call for rifles of great power, but for deliberate shots at rather short range, they are not necessary on game like our common deer.

(Continued on page 30)

The One I Missed

By ROY C. MCHENRY

A WHILE ago a young Spaniard in my town got peeved at his girl friend for something or other, and giving way to the urge of his Latin blood, shot her up. In doing the job he was true to his race, and used one of the imitation Colt revolvers that they turned out at Eibar and other places over in Spain, and sent over here shortly after the war to retail at \$1.59, or some such figure.

About as soon as he landed in the hoosegow, a friend of a friend of his, who knew that I could speak Spanish, got me to represent him, and for several days it looked as if I were going to have a murder case on my hands, with a darn slim defense. However, luck played along with the young Spaniard to a certain extent, for the girl friend, instead of dying as was anticipated, got well. Whether or not this was due to the inefficiency of the lethal weapon, I am not prepared to say.

When it came time for the grand jury to sit, the girl friend was on hand, practically as good as new, to testify; and in due course an indictment was returned charging Jose Maria Fulano with assault in the first degree.

With the girl alive, the case was dead open-and-shut against Fulano, and there was nothing left to do but plead him guilty and try to get him as light a sentence as possible. I induced His Honor to whittle it down to seven years, and Fulano went away. He didn't have any *dinero* to pay me with, and his friends who got me into the deal failed to pass the hat around.

After sentence was passed, the D. A.—who is considerable of a joker—asked me to go up to his office with him. When he got me there he treated me to a burst of oratory in his best court-room style, and I thought he was going to open his heart and give me, and the newspaper boys who had come along to see what happened, a drink of his private stock, that he keeps in the jug behind volumes 159 to 163 of the Court of Appeals Reports.

We were in for a disappointment, however, for instead of the quencher, he reached down and presented me with what would have been "Exhibit A"

of the Peoples Case, if we had gone to bat; this being the same .38-caliber S. & W. Special Colt imitation that had caused all the trouble.

"Knowing your interest in firearms, Counsellor, and in partial recompense for the meager emolument which you received for your efforts in behalf of your unfortunate client, permit me to present you with this superb piece of mechanism, as a souvenir of the occasion."

I stuffed the piece of Spanish junk inside my trouser band, and carted it over to the office, where I put it away with the stuff I do not regard as being worth hell-room, and forgot about it—or would have, except that the next day the chief dick over at police headquarters called me up.

"I hear the District Attorney gave you the gat Fulano shot the girl with," he began.

"What's the idea? Trying to spring me for having a revolver without a permit?" I answered, thinking I was going to have a second installment of kidding handed to me.

"Nothing like that, Judge. We've got a collection down here of guns that figured in shootings, and we want that .38 to add to it."

"Do you expect me to turn over the entire fee I got in the case, for you to put a label on and hang up on a hook?"

"Why, no, Judge. We know you collect guns, and we thought perhaps we could get you to swap it for another one."

More to please the chief detective than anything else, I wrapped the thing up in a piece of newspaper, and took it down to headquarters. I tried to make a dicker with him for a .45 with a barrel sawed down to two inches, but according to the label it had been used in a holdup back in the nineties, and he couldn't think of letting it go. It was the same way with a rusty and dust-covered automatic. We pretty nearly made a deal for a little .22

tip-up revolver, but it turned out that it also had had a bloody career in '85. Its barrel was badly pitted, anyway, so I was just as well pleased we didn't trade.

Finally, looking up in the corner of one of the cases, which wasn't so well lighted, I spotted what I took to be a Bisley Colt, half as long as my arm.

"How about that one up there?" I inquired, pointing to it.

There was no inscription on the gun; only a tag bearing a number.

"You mean that one, No. 64? That's no good. It didn't figure in a killing, or anything. I took it off a drunken wop, the first year I was on the force. It wasn't even loaded."

"Let's look it over, anyway."

"All right; I'll open the case. I'd better get a rag to wipe it off with,—it's real dirty, hanging up there all these years."

In the light, with some of the dirt rubbed off, I found I had been mistaken about the make. It wasn't a Bisley Colt, although it had the same gracefully curved and perfect-fitting grip. It was a top-break affair, and after scrubbing the rib along the top of the 8-inch barrel, I found the inscription "Smith & Wesson Pat'd 1869." After some negotiations we made a deal. I released all claim to the Spanish .38, and in addition thereto bought a ticket to the Policemen's Ball—which I would have done anyway; and walked off with the long Smith & Wesson.

Back in my office, with a cleaning-rod and an oily rag, I went over my new acquisition. I dreaded to explore that .44 bore, expecting to find it pitted with cankerous spots; but to my joy it was without spot or blemish. The barrel hung rather loosely, and the ejector refused to function, but a visit to the shop of a friend who is a shark at fixing such things, cured both troubles; and a liberal dose of oil made the old-timer operate with all the smoothness that is characteristic of Smith & Wessons.

It took quite a while to figure out what cartridge this gun was chambered for, as the .44 S. & W. Special was obviously much too long, and the .44 Russian refused to crowd in. After consulting the Ideal Hand Book, and sundry and (Continued on page 30)



Graphic Charts for Small-Arm Ballistic Computations

By MACON FRY*

BY MEANS of the accompanying charts† it is possible to compute graphically, for any range up to 1500 yards, the quantities ordinarily considered in making up a table of fire for a given gun and cartridge, viz., velocity, energy, height of trajectory at mid-range, time of flight, and angle of departure. The charts may be used for extending the data given to ammunition manufacturers' tables (which usually give values for muzzle and 100 yards only), for determining the maximum lethal range of a particular gun and cartridge against a given type of game, for studying new loads, and in many other ways which will undoubtedly suggest themselves to the user.

Description

Plate I is an alignment chart for computing the kinetic energy of a bullet, given its weight and velocity. It will take care of bullet weights between 40 and 400 grains, and velocities between 400 and 4000 feet per second. To use it, simply place a straight-edge between the points on the weight and velocity scales corresponding to the given weight and velocity of the bullet. The straight-edge will then intersect the energy scale at the corresponding value of energy, measured in foot-pounds. For example, what is the kinetic energy of a 220-grain bullet traveling at 2000 f.s.? Place the straight-edge on the right-hand (weight) scale at 220 grains, and on the left-hand (velocity) scale at 2000 f.s. We see that the straight-edge intersects the middle (energy) scale at about 1950 foot-pounds. This is the answer.

Care should be used in reading the various scales, since the intervals between graduations are not uniform, being logarithmic as in a slide rule. For this reason it will be found very helpful to use a transparent straight-edge, thus enabling the markings underneath it to be noted.

Plate II is a chart for finding the velocity at any range, given either the velocity at one point and the ballistic coefficient, or the velocities at any two points. Usually the latter method is applicable, since manufacturers of ammunition customarily state the velocity at the muzzle and at 100 yards. For example, what is the velocity at 500 yards for the 130-grain .270-caliber Winchester cartridge? The manufacturer

gives 3160 f.s. as the muzzle velocity, and 2970 f.s. as the velocity at 100 yards. Place a straight-edge between 3160 f.s. on the zero range line and 2970 f.s. on the 100-yard range line. The point at which the straight-edge cuts the 500-yard range line is the velocity at 500 yards, in this case about 2260 f.s.

If the straight-edge is now moved parallel to itself until it touches point "A" on the chart, it will cut the top scale at the value corresponding to the ballistic coefficient of the bullet in question, in this case about 0.5. The ballistic coefficient may be defined as a measure of the *carrying power* of a given bullet compared with that of a certain projectile which has been taken as a standard. As will be shown later in the discussion of Plate IV, the ballistic coefficient depends upon the weight, caliber, and shape of the bullet. Broadly speaking, it is a figure of merit for any given bullet, since the larger the coefficient, the less velocity falls off with the range. This statement should be taken with some reserve, however, since a large coefficient is also associated with great penetration, and the latter factor may be undesirable under certain circumstances. The ballistic coefficients of nearly all small-arm projectiles are under 1, in fact most are under 0.5. Artillery projectiles usually have coefficients larger than 1, some as large as 10 or even more.

If the ballistic coefficient is already known, the velocity at any range can be found from the muzzle velocity alone. Place the straight-edge between point "A" and the given value on the ballistic coefficient scale; this gives us the slope of the velocity line. Now move the straight-edge parallel to itself until it touches the given value of muzzle velocity, whereupon the velocity at any range may be read off directly. From these values of velocity it is a simple matter to compute the kinetic energy of the bullet at any range, using Plate I.

Plate III is an alignment chart for determining the time of flight, height of trajectory at mid-range, and angle of departure, given the range and the *average velocity* of the bullet over that range. The procedure is very similar to that described for Plate I. Align the given points on the range and velocity scales, and read the computed quantities off the two middle scales. An approximate value of average velocity over the range may be found by taking the mean of the muzzle and

terminal velocities. However, it is much better to determine the average velocity from a number of points spaced at regular intervals down the range. The more points that are used, the more accurate the results, but it will not usually be necessary to take points closer than about every 200 yards. Plate II may be used to get the intermediate velocities. For example, suppose we wish to find the average velocity over a range of 1000 yards. Take the velocities at the muzzle, 200, 400, 600, 800, and 1000 yards; add them together and divide by the number of points, in this case six. Don't forget to include the muzzle velocity among the points.

Angle of departure is the angle the gun must be pointed above the horizontal when the bullet leaves the muzzle, in order to hit the target. If the gun has no jump, sight angle and angle of departure are the same. If jump is present, it must be taken into account in determining the sight setting. The amount of jump may be measured by targeting the piece at point-blank range. The sight setting at this range is then the zero for angle of departure.

Note that the scale for height of trajectory at mid-range reads in inches for values less than one foot.

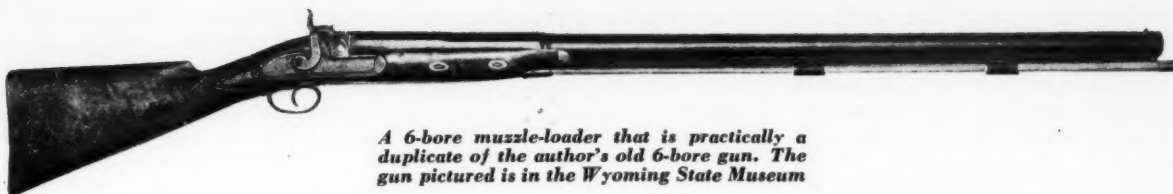
Plate IV is an alignment chart for determining the ballistic coefficient of a bullet from its weight, caliber, and shape. It is of rather doubtful value, since it depends upon knowing the coefficient of form of the bullet, and small arm projectiles have such a wide variety of shapes—hollow points, flat points, cannelures, belts, etc.—that it is impossible to arrive at an accurate figure by geometry for any except those having ogival points and straight sides. It is therefore recommended that this chart be used only in the absence of experimental data, it being preferable to find the ballistic coefficient from test firings, using the method described for Plate II. Plate IV may be of considerable use to home bullet-moulders, however, in arriving at a tentative design for a new bullet which will yield the desired external ballistic properties.

To use Plate IV, align the straight-edge with the given values on the weight and caliber scales, and note the point at which it cuts the sectional density scale. Holding the straight-edge at this value of sectional density, swing it around until it touches the known (or estimated) value

(Continued on page 29)

* Ordnance Engineer, Ford Instrument Co., Long Island City, N. Y.

† Facing Page 42.



A 6-bore muzzle-loader that is practically a duplicate of the author's old 6-bore gun. The gun pictured is in the Wyoming State Museum

My Shooting Days

By FRED KIMBLE

As told to CHARLES B. ROTH

I AM A modest man, but even a modest man has moments when he feels a glow of satisfaction over some accomplishment or other in his life. So when I read the other day in a great newspaper that trapshooting all over the world was growing in popularity, in every civilized country, I had one of those moments when a man feels good toward himself.

If I were given to boasting or vainglory I suppose the thing for me to do would be to rush into print and claim that I was in large part responsible for this great sport. But occasionally my friends do this for me, and that is more seemly. In a way, however, it is true: I really was able, years ago, to suggest some changes in the sport of shotgunning which make much of its popularity today a fact. But this was through no genius or plan of mine, I wish you to understand. It was through pure accident.

Many years ago, while searching for a more effective shotgun, I accidentally stumbled upon the principle of modern choke-boring. Of course without choke-bored shotguns trapshooting would not be where it is today. Later, seeking some substitute for live pigeons for trapshooting matches, I invented the clay target,—almost the exact replica of the hundreds of millions of clay targets that are broken every year in England, America, France, and even faraway Japan.

For neither of these inventions did I receive any profit; but that hasn't bothered me. I didn't invent them to make a fortune or a name, but because they made my own shotgun sport more satisfactory. If others have benefited, so much the better.

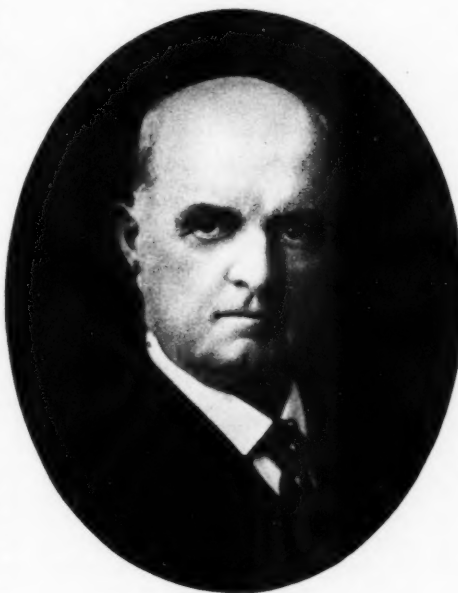
I have been using a shotgun for more than three-quarters of a century, so I have had an opportunity to watch it develop. And since I began my shooting career as a wildfowler in the greatest wildfowl section of the

NOTE: In reading this article one should bear in mind that in the days of which Mr. Kimble writes, the number of wildfowl was so vast that no one dreamed of conservation or bag limits. The supply of birds seemed limitless, exhaustless, and shooting was one of the great pastimes of the day.—EDITOR.

world—the river bottoms of the State of Illinois during the sixties and seventies—I believe that I enjoyed sport which no man will ever know in the future.

Wildfowling was the great sport in Illinois in those days, and every little village had its "world-champion duck shooter." In the opinion of his friends and neighbors, this man could outshoot any other wildfowler in the world. They not only believed this: they backed it with their money. Therefore duck-shooting matches were common.

A recent picture of the author, at the age of 88



Since I had the opportunity to do a great deal of wildfowling myself, and had the temperament and physical equipment to develop proficiency, I soon had a reputation of being a "world champion" among my own friends. We used to travel about in our quest for better shooting-places, and before I knew it my friends would have another duck-shooting match all arranged for me.

This was never hard. They would go from our camp on the river, into town. At the general merchandise store they would find duck-hunters gathered, talking ducks. One of our party would announce quietly that with them on this trip was the best duck-shooter in the world—the "world champion." No more than this was required to start proceedings. Arguments would take place. The local men would steadfastly support their townsman, and proclaim him the "world champion." And of course there was only one way to settle the dispute.

I do not know how many of these matches I took part in; hundreds beyond any doubt. They were interesting then: they are more interesting to me now, because nothing like them is now possible anywhere on this earth. Their terms were simple, the rules always identical: We were to shoot for a certain length of time, usually all day. Whoever had the most ducks to bring in at nightfall, no matter how he got them, was the winner. The amount of powder that he used, the weight of his shot load, whether he shot them in flight or resting on the water—these matters did not count. Only the number of ducks he brought into camp mattered in winning the match.

The matches were rarely for money; they were sporting propositions pure and simple. We shot for money at wild pigeons in formally organized trapshoots, but our duck matches were for sport; or, if you choose, for

the honor of one community against that of another.

You would expect honesty from a man 90 years of age, so I will be honest with you in discussing the results of these duck matches, and tell you that I was never beaten in one. I have called myself a modest man, and this sounds like anything but modesty; but when I tell you that I had on my side an advantage which no amount of skill or luck could offset, you will see that I am not inconsistent.

What this advantage was I have already suggested; better guns. My opponents shot guns of the kind common in that day; open-bored guns which were limited in range. I shot the first choke-bored gun,

were shooting 40-yard guns. They had to wait for a benighted duck to come down within range. But I didn't, I could reach them 80 yards away. And that is why I always won.

You may wonder how I happened to be the one to discover choke-boring, when other men, for centuries indeed, had been working on the same problem. It was luck, blind luck; and more than luck, it was pure accident.

Today nearly every shooter knows what choke-boring is. The choke-bored gun is the standard, except for certain forms of shooting at close range which require a great spread of shot. But even though, according to some of my scholarly friends,

thought I could do a pretty good job of boring a barrel myself.

I bored it out true cylinder to start with, and then fired it at a target 40 yards away. It gave the usual shotgun performance—spread the shot over a five-foot area. English gunmakers were experimenting with an idea of their own, of relieving the muzzle just a little, claiming that this helped to reduce the spread. I tried it, and it worked. The spread was reduced from five feet to four feet. But I was still not satisfied, so I bored the barrel from the breech to within one inch of the muzzle, which I left smaller, giving what is today known as a heavy choke. Then I assembled the gun (a muzzle-



Flooded river bottoms in Illinois. It was in such surroundings as these that the author did his wildfowling sixty years ago

so far as I know, in history; a gun which I had bored myself. It would outshoot any other gun in Illinois by 30 yards. So you see I could not help winning.

In those days the greatest range any shooter could expect from his shotgun was 40 yards. Mine would kill at 60 or 70, and one of them at 80 yards. Most of our duck-shooting was in over-flowed river bottoms, where the water was a few inches deep and the country wooded with trees 40 to 50 yards high. We hunted by wading around in our hip boots, shooting at ducks as they passed overhead, above the trees. This made our closest shots 40 yards, and my opponents—poor chaps—

choke-boring is mentioned in sporting literature as early as 1781, as late as the last quarter of the past century men plodded along with short-range guns, cursing their inability to reach out and get more birds.

I don't know how the idea came to me, for I had never heard of these early experiments in choke-boring; but one day I thought that if I could constrict the muzzle of a gun,—make it smaller than the rest of the bore, the shot wouldn't spread over so large an area. So I found a musket with a good heavy barrel, and began experimenting with it. I am no gunsmith, but I had watched gun-borers work, and

loader, of course), loaded it, and fired it at the target, expecting to have my head blown off.

I went to the target not knowing what to expect, but not expecting what I found: a seven-foot spread of shot! That disgusted me, and convinced me that my idea was all wrong. I felt that as an inventor I was an excellent failure. And here is where pure accident enters. The gun being a muzzle-loader, to bore it out each time I had to dismantle it by removing a plug at the breech; a long, tedious job. When there was a chance of discovering something new, I had the patience to do the job; but now that I was convinced

that my ideas were fruitless, I wished to waste no more time than necessary. So I began cutting the barrel from the muzzle, intending to make it a true cylinder bore once more. As soon as I thought I had all the choke taken out I loaded up and shot at the same target, from the same distance: 40 yards.

Expecting to find the usual five-foot pattern, I walked up to the target. But what was that? The entire shot charge was clustered within a 30-inch circle! This was the first target of the kind I had ever seen. I was excited. I thought of course that it was an accident: one of those freaks that sometimes occur in every field. I went back to the 40-yard line and tried it again, and again there was that same 30-inch pattern. I tried again, again, and still again. I shot half the afternoon, and still the size of the pattern did not vary an inch one way or the other. And then I knew that I had what I was seeking.—Why I had it I did not know, but I soon found out. In running a rag through the barrel from the breech, I noticed that the rag would stick at the muzzle. In my hasty rebaring I had not taken all the choke out, but had left just enough to do the trick.

I couldn't keep a thing of this kind a secret for very long; I had to tell somebody. My closest hunting friend was Joe Long, and I wrote to him. He lived in Boston, Massachusetts, and I sent him some targets. A letter came from Joe by return post, demanding to know what on earth I had done to the gun.

Joe had just ordered a new gun from a gunsmith named Tonks, so he at once changed the specifications and had it made according to my new wild idea. It was the first commercial job of choke-boring, I think, in the world. It supported the theory, and shot closer than my experimental piece. Then I ordered a gun from Tonks myself,—one he had started to build for a man who had died before taking delivery.

This gun of mine was a single-barrel muzzle-loader of 9-gauge. When it came to me it shot so close that for several months I was disgusted. Compared to the old open-bored guns I had been used to, this gun shot like a rifle, and I made more misses than I had ever made in my life before. Often I was tempted to give the fool idea up, but I didn't. I kept on shooting that little gun, wasting powder and shot, until I mastered its use. Then I was in a class by myself, with a gun that had a range of 30 yards more than that of any other shotgun in Illinois.

I shall never forget my first duck-shooting match with this single-barrel. It was against a man named Reese Knapp. Knapp lived at Browning, Illinois, on the Sangamon River, shot the biggest gun in Illinois—a 4-bore single-barrel that

weighed sixteen pounds—and was conceded to be the finest wildfowler in that whole part of the country. His customary load of shot was $2\frac{1}{2}$ ounces. When he saw my little gun and learned that I intended to use only $1\frac{1}{4}$ ounces of shot, he apologized for the beating he was going to mete out for me.

Our match took place in a shallow overflow where the trees were high, and Knapp and I separated about three hundred feet. We shot until mid-afternoon, when we both ran out of powder. When we unloaded the boat at the landing and counted the bag, we found that I had 128 mallard ducks, while Knapp had only 37. Knapp's friends who had gathered at the landing to see the stranger humiliated, with the fickleness of crowds the world over, turned on Knapp and chaffed him without mercy. And Knapp didn't like it at all.

I recollect another duck match that was talked about in Illinois for many years—the one I had with General Hough, a United States Army officer during the Civil War. He was considered one of the best duck hunters in the state, and he really was an exceptional marksman. He had one weakness, however: he boasted about how good he was. Several of my friends had been hunting with the General, and he always brought in more ducks than they. Then he spent all the time in camp praising himself and belittling them. He wasn't very popular. In a spirit of vengeance, my friends arranged a match with General Hough for me. We were to shoot one Sunday at a place called Duck Lake.

The General, condescending toward me because I was in his eyes just another victim, rowed me to the shooting place in his boat. In the boat I had a little wooden platform which I had devised to keep me from sinking down into the mud. It was about three feet square, and would sustain a man's weight and keep him from going down to his armpits in the soft Illinois river-bottom mud.

"General," I said, "do you want the platform or the boat to shoot from?"

"The boat. You keep the platform. I'll row down here a hundred yards or so, and I'll pick you up when we decide we've got enough."

The time was early fall. Most of our birds were blue-winged teal. How they could fly! It was some of the finest shooting I have ever enjoyed. And I could see that the General was getting his share. We had a good flight until nine that morning; then the General shouted to me and asked me if I wanted to call it a day.

"I'm willing if you are," I shouted back. He poled out and picked up his ducks, then came over to me, his face all smiles; the smiles of a man who knows—simply knows, that he is victor. He had 37 ducks; a good day's work he thought it

was. I agreed. Then he began apologizing, saying he was sorry he took the lion's share of the shooting, but he couldn't help it if the ducks chose to fly past him instead of me.

"By the way, Kimble, how many have you?" he asked.

"I don't know," I replied. "Let's find out. Come on over here with that boat." We paddled around in the pond lilies for about a quarter of an hour, picking up 115 ducks. The general was a mighty silent man on the way back. His smiles had vanished. I think he knew what he was in for.

At the landing-place we were met by some of the General's friends.

"How many this time, General?"

"Over a hundred for Kimble; same old count for me. But I know when I'm licked, and this time I sure am." Then he explained that he had heard stories of my having bagged a hundred ducks in a day but had never believed them; had considered them in the same class as other hunting yarns then so common. He thought that beating me would be easy. I never had a more chagrined opponent than General Hough. He was a proud man.

After a few years, as I shall explain presently, I decided that I wanted a gun with even more range; so I obtained a 6-bore. It was the best wildfowl gun in the world, bar none. I bored it myself; bored it so carefully that it would put its entire shot charge into a twenty-four-inch circle at 40 yards, and would reach out and kill heavy wildfowl at full 80 yards. I thought at the time that this 6-bore was the finest, most effective shotgun ever made. It has been sixty-six years since I fired it the first time, and I have owned and shot many guns since, including the very latest heavy wildfowl pieces; but I have never seen another shotgun that has caused me to change my idea one iota about that old muzzle-loading 6-bore being the quintessence of shotgun effectiveness. No; there has never been another gun just like it, in range, power, killing ability, and close pattern. I used this gun for several years in the hunting field, and in the shooting-matches which I shall describe shortly.

Shooting wildfowl soon became a matter of science with me, with guesswork practically eliminated. The score didn't matter so much now, and killing ducks was nothing but the practical research of a scientific mind. I liked intricate, difficult, almost impossible shots. They appealed to my mathematical mind. The feat that filled me with satisfaction was not the killing of another bird, but putting that charge of shot exactly where I wanted it, at exactly the right moment. I eventually developed and followed the philosophy

(Continued on page 30)



Back of the firing line

Hints On Running Turkey Shoots

By P. H. MANLY

AN ADVERTISEMENT that appeared on Page 4 of the March 1935 RIFLEMAN stated that J. R. Crawford of Orofino, Idaho, had won 12 turkeys at the annual turkey shoot there the fall before. Meeting one of their most enthusiastic shooters last summer, I inquired, "How come 'you-alls' let one man get away with twelve turkeys, all by himself?" And he replied, "I'll tell you the truth: we just couldn't help ourselves!"

Well, I had to see their next shoot, just before Thanksgiving. So I drove over there some 60 miles, on some roads that were good, some that were bad, and some that were worse. Owing to bad weather—rain in the morning and heavy fog the rest of the day, the attendance was below normal—but there was nothing the matter with the shooting. There were about a dozen Winchester 52's—several of them heavy-barrelled, besides a bull Springfield and other weapons. It would have been easy to win a turkey if a shooter had had a rifle that would outshoot half a dozen 52's regularly. They had a very nice temporary set-up for a turkey shoot, at the end of the combined landing field and golf course. There were five firing points staked off, and a safety lane between lines of fire. The targets had bullseyes 3-9/16 inches in diameter. The day was too dark for any action pictures, so I had to be content with some timed ones, as published here. I have carried a camera to many shoots, but heretofore have always forgotten to use it.

In some 30 years of attendance at them, this was

the first turkey shoot that I considered to be just about right. The first one that I helped to promote was in 1909. I have gotten up quite a few shoots since, and have kept my eyes and ears open for helpful ideas at those I attended as a contestant. At many of these latter I really had an unhappy time, and vowed never to go to another.

Did you ever go to a place where a turkey shoot was advertised to be held, and not find anything there but a load of turkeys—no place suitable for shooting, no targets, no rests, no spotting scopes, and—no, not even a manager? Well, I have. At one place the managers didn't even show up with the turkeys, so we shot for nickles for a while, and called it a day. So I am offering a few suggestions for those who wish to inaugurate turkey shoots—and keep them going. My remarks apply more especially to improvised ranges where there is no pit or shelter for the marker, as the managers of regular rifle clubs usually are experienced enough to put over any shoot they undertake.



Advertising

This can be accomplished by putting out posters, hand-written or printed. However, the printer will most probably put a modest advertisement in the paper for less than he will charge to set up type for special handbills, and the advertisement will reach more prospects than the posters would. After our first shoot, and when we had gotten the names and addresses of most of the regular shooters, we had postal cards printed announcing our next match, and sent one to each shooter as a special invitation, besides the advertisement in the paper. The advertisement or posters should plainly state the place of the shoot, the date, conditions, distances, positions, kind of targets furnished, sights allowed, etc. However, if anything is mentioned about a raffle the Editor may refuse the advertisement on account of the postal laws.

Preparedness

To hold a good shoot, and keep up interest in these shoots so that the contestants will be eager for more, if the shoot is not held on a regular range everything in the way of shelters, rests, targets, rifles, ammunition, firewood, turkeys, etc., should be assembled and

This was for practice

ready for use at the designated place, and at the time advertised. The range should be measured, and a bullet stop provided if necessary. A large block of wood makes a good bullet catcher, and is a good

thing to fasten targets to on an improvised range. If the range master has a spotting telescope and will set it up and call the shots aloud as fired, even before the marker reaches the target, it will amuse the onlookers and spare the shooters from having to make trips to the targets to find out where their shots are hitting. The marker should mark and number each bullet hole as fired, with a soft pencil. We learned to keep a screen—a loose piece of paper or old target—between the target and the backing board, and move it a little after each shot so that if small bullets went through larger holes they would not be lost or disputed. Everything should be done to prevent dissatisfaction, and to avoid “waiting” and “chewing” matches. We called the shots by the rings, but really measured from target center to bullet-hole center if there was any question of a tie. If the calipers said a tie, we had it shot off at once.

For 60-yard shooting there are plenty of printed targets more suitable than hand-made ones, such as the 20-yard pistol target or the 50-yard small-bore target. Most of the recent targets have a printed X or small center point that is easy to measure from in deciding ties. For convenience and speed in changing targets, the latter can be thumb-tacked to a piece of thick, soft paper board, several of these boards always being kept ready with targets attached and screens in place. The marker carries with him a fresh target and hangs it up as he takes down the old one for final inspection after the last shot of the round has been fired. Each board has a hole in the top, from which it is hung on a nail when there is no wind. By this system a fresh target is always ready for the next round, or for sighting-up. Also, we put a large number on each target and copied it on our score sheet, so that a target could be positively identified later if necessary. Many shooters like to save their winning targets as mementos.

But here is a warning: Where the marker is not sheltered, do not allow anyone to fire a shot near

But this was for turkey!

the firing point during a round when a shooter is aiming. Invariably the marker will hear the report and come to the targets to look for a bullet hole that is not



Hallam had a good rifle

there, at just the time that the regular contestant is letting his shot off.

Individuals and Pools

Many shooters prefer a match in which a single bullet hitting a certain sized mark wins a turkey. Individual matches are fine if a happy balance can be maintained so that contestants can win fairly regularly without causing the promoters of the match actual loss. A single well-placed shot in individual matches wins a turkey, whereas the same shot in a pool always has the chance of being tied or beaten until the last shot of the round has been fired and the measuring completed. But the real competition is in pools where the boys can shoot directly against each other and find out who has the best gun and who Lady Luck is petting.

Sighting

Remember that in most turkey shoots the shots are usually fired singly, at rather long intervals apart; so in sighting-up your rifle for these matches do not fire much oftener than one shot in 5 minutes, so as to avoid warming up the barrel,

which might change the elevation appreciably. Experience gained from furnishing a rifle for the use of any contestant that might wish, indicated that the best shooting was done with a plain-flat-topped bar front sight in connection with a rear peep. Several times I have seen a contestant take the furnished rifle and win three turkeys in three shots. One fellow even won four turkeys in as many shots. In some later matches I put on an aperture front sight, as the apparent ease of aiming with it appealed to the crowd. But no one ever made one—two—three shots and out with it. (Three turkeys to a shooter was our limit then.) It was easier to shoot a smaller 10-shot group with the aperture front sight than with the plain bar front, but the bullet holes seemingly grouped around the center part of the time, instead of cutting into the tack-hole. One shot cutting center will quite often win more than 10 shots $\frac{1}{2}$ inch away. Contrary to all of the authorities that I have read since, I sighted the right so that the bullet would strike where the top of the front sight was held, instead of having to hold an indefinite distance below the mark. It won turkeys, all right, and I still sight that way.

Limits

Really some kind of limit is necessary if turkey-shoot promoters expect to hold more than two matches. Ordinarily three or four marksmen, because of ability or equipment, will win three-fourths of the turkeys put up when the matches are started. After this has occurred about twice Mr. Average Shooter will say “I’m not going to any more turkey shoots. Jake Schueter, Cap Gun, and those two fellows from across the river always win three-fourths of the turkeys, leaving one-fourth for all the rest of us; so that instead of a fellow having one chance in seven or eight, he really has only one chance in twenty-eight or thirty-two to win. I like to shoot, but to win a turkey I reckon I’ll have to go down to Dinty’s and roll the bones.”



At our first matches we made a three-bird limit, then raised the limit to four birds as shooters seemed to be getting scarce. When a contestant won his limit there was nothing for him to do but go home, no matter how much he wanted to shoot; and it always gave the others the same home idea. So, trying always to increase interest in rifle shooting, we decided it would be better if we could scatter
(Continued on page 29)

Rapid-Fire

By JOSEPH A. MILNER

ARE you one of those riflemen who have difficulty with the rapid-fire position? If so, what are you going to do about it? Are you going to sit back and bewail your luck, or are you going to buckle down to serious business and really solve this particular problem? It is up to you, and I shall try to help you.

When we trace the development of rapid-fire from the beginning we find clumsy attempts at fast muzzle-loading, quick priming, and a host of other expedients to facilitate the rapid handling of firearms. Up to the time of the breech-loader there were all kinds of monstrosities that the gun-makers called firearms. Multiple barrels, revolving barrels, and all types of devices were used to speed up the fire of rifles. It remained for the breech-loader and the magazine-loader to set the pace in rapid-fire.

When you begin studying the details of rapid-fire, it will be to your advantage to stick to established principles. First I want to caution you about speed. In the preliminary stages of study, avoid speed. Start slowly, move slowly, pay strict attention to the small details that do not seem important. Devote most of your time to acquiring a definite understanding of just what it is that you are trying to accomplish. Remember that nearly all human beings are creatures of habit. When the human mind has tried a thing once, the second time it is tried it seems easier. Each effort to master it brings the objective nearer. Beginning right means finishing right. If any attempt is made to speed-up rapid-fire before the brain becomes accustomed to the procedure involved, it quite naturally will fumble the assignment.

Assuming that you are a good shot in all other respects, but not in rapid-fire, have you ever tried to analyze yourself and discover the trouble? I am going to talk to you just as if I were right there with you. You and I are going to get together on this particular problem and locate the trouble. I know that you do not have any trouble making V-fives or hitting the 10-ring when shooting slow-fire, but what happens when you begin shooting rapid-fire? You probably manage to get 40 per cent of your shots in the black, but the rest go all over the target. Why?

If out of your string you can get 4 hits in the bullseye, it stands to reason that you should be able to get the rest of them in too, other things being equal

Isn't the most logical answer that of carelessness?

But the most logical answer is not always the true solution. Most of the trouble is caused by uncontrolled speed. In rapid-fire you must make haste slowly. To the ordinary shooter rapid-fire is something that must be rushed as fast as possible. This is entirely wrong. Speed is of course an essential factor, but it is only one factor. There are others equally important. Let us take a typical example. At any large match that has for part of its course a string of rapid-fire, you will find all types of shooters. The entire group has good eyesight. They all have strength enough to shoot the rifle in all positions. But the majority come to grief in the rapid-fire string. After the targets have been marked the score tells the tale. Broken clips, jams of all kinds, misfires, mechanical alibis, and so on indefinitely. These are the results of poor training on the part of the contestants. Nine-tenths of all of the freak alibis can be prevented. Constant study and practice will pay dividends in closer groups, higher scores, and that feeling of confidence that comes of doing a job well.

Rapid-fire involves all of the details of slow-fire: POSITION, SIGHTING, HOLDING THE BREATH, TRIGGER-SQUEEZE, etc.; the only difference being that you must hasten the performance, and cut down on the time of each operation.

We shall assume that you are sufficiently familiar with shooting to adjust your sling properly. Now that you have done that, we can get down to business. Take the standing position and face your target. Now half face to the right, and drop slowly down on your knees. Then stretch out your right hand and place it on the ground so that your left elbow is in direct line with the target. Drop your left elbow to the ground, slide your body back, wipe the dirt off the right palm on the seat of your pants, and place the gun to the right shoulder, as illustrated in the sequence given. Sight your target and see if your rifle is in a direct line with it. If it is necessary to strain to the right or left, move the entire body over. In other words, do not hold the rifle with any muscular effort. Make the sling do all of the holding. Keep moving around until you can line-up your sights without straining. *This is very important!* Right here is where controlled relaxation enters the picture. You must make every effort

to maintain this position throughout the rapid-fire string.

Now we will practice the above a few times. Place the right hand on the ground. Using this hand as a lever, raise your body off the ground until you are kneeling. Then, without moving the feet, stand up, and your toes will be properly placed for assuming, easily and without effort, the rapid-fire position.

Remember these stages, and practice until they are letter-perfect: first on the knees, then on the palm of the right hand, on the left elbow, slide back, wipe the dirt off the palm of the right hand, place the rifle to the shoulder, and sight the rifle. If this is properly done it should take you about three seconds to get into position. You must concentrate upon this until you have a smooth, effortless method of getting into position.

When you have gained confidence in your ability to take position as rapidly as possible, it is time to study the next step of rapid-fire. This is what is known as assumed fire or "dry shooting." When you have cut the time down to about three seconds, and have landed in a perfect position, you should be able to squeeze the first shot off in five seconds of elapsed time. As you know, there is a time limit on rapid-fire. It is either 60 or 70 seconds on the mid-ranges. Taking the figure 60 and dividing it by the number of shots to be fired, will give you six seconds per shot. This is ample time if your position is perfect, but if you have to squirm around and waste a lot of time getting into position, you are losing valuable points.

When you are able to get your first shot in five seconds, you have reached the first milestone in training. You should now take two seconds to eject the spent shell and load a new cartridge into the chamber. The next three seconds should be devoted to squeezing off the shot, and making sure that it is a bullseye. Use this rhythmic method: two seconds to load and unload, three seconds to fire the shot.

The next step in the development of a shooter "par excellence" is that of bolt manipulation. This is a fundamental step in good rapid-fire shooting, and no pains should be spared to make oneself just as efficient as possible in it. The inexperienced shooter has a great deal of trouble with bolt manipulation. This is primarily because he "fights" the bolt. He sweats, and tugs, and jerks, and shifts his position and gets all out of breath, trying to



Rifle Remington News



BRIDGEPORT, CONN. NOV. 1936

A PAPER FOR PEOPLE WHO SHOOT

ILLINOIS CHAMPIONSHIP TAKEN WITH MODEL 37 AND PALMA MATCH!

Wes Hansche Wins State Title with New Remington .22 Rifle

FORT SHERIDAN, Ill.—Shooting the same Model 37 that served him so well at Camp Perry, Wes Hansche of Racine, Wisc., again dramatically proved to the shooting world that the new Remington target rifle is "going places"! He calmly stacked his own ability and his faith in the Model 37 with VEEZ 73 ammunition against a field that included some of the finest shots in the country, fought through a long, gruelling competition and rolled up a 490 x 500 that meant victory!

MODEL 37 LIVES UP TO PREDICTIONS

When the new Remington match rifle was first shown to shooters at Camp Perry the consensus of opinion was that here at last was a rifle destined to make shooting history. Complete in every detail, custom-tailored to the needs of the target shooter, it looked like the answer to a rifleman's prayer. They examined its heavy, accurately rifled barrel, worked the velvet-smooth action, tested the crisp trigger pull, peered through the finest set of target sights imaginable. And before anyone could raise the eternal question, "... but will it shoot?" the records started to fall. A. F. Goldsborough hung up a 14X possible at 200 yards that broke the world's record wide open. Then the 400 x 400's started coming in. And now Wes Hansche has carried off the first state championship to be won with a Model 37.

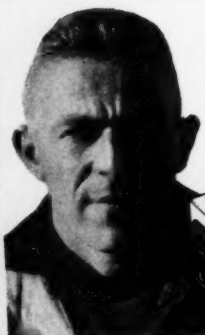
What's the answer? Go to your dealer now and get your order in for a Model 37 just as fast as you can. They'll be available shortly after January 1st.

FIRST COME, FIRST SERVED!

So far only a few advance production rifles are out. With the new year Remington will be supplying

Model 37 rifles as fast as they can be made... but there's not going to be any rushing at the expense of accuracy and workmanship. Every Model 37 will have to pass the strictest accuracy test any manufacturer has ever demanded of a rifle. Remember—when you get your Model 37 it's going to be loaded with potential championships!

THE MAN *** THE RIFLE *** THE AMMUNITION



WES HANSCHKE, Racine, Wisc., can hold 'em in the ten ring like a machine rest. Doesn't like to talk about himself, but prefers to "say it with targets!"



VEEZ 73 Palma Match ammunition—the .22 cartridges any shooter can rely on to "shoot where he looks."

MODEL 37 Remington .22 Match Rifle—the latest sensation of the small-bore world.

FRED JOHANSEN RUNNER-UP IN ILLINOIS CHAMPIONSHIP



FRED JOHANSEN, Joliet, Ill.

VEEZ 73 Shooter Captures 1936 Aggregate

FORT SHERIDAN, Ill.—Fred Johansen, Joliet, Ill., was a close runner-up to Wes Hansche in the Illinois State Championship and was tops in the 1936 Aggregate of

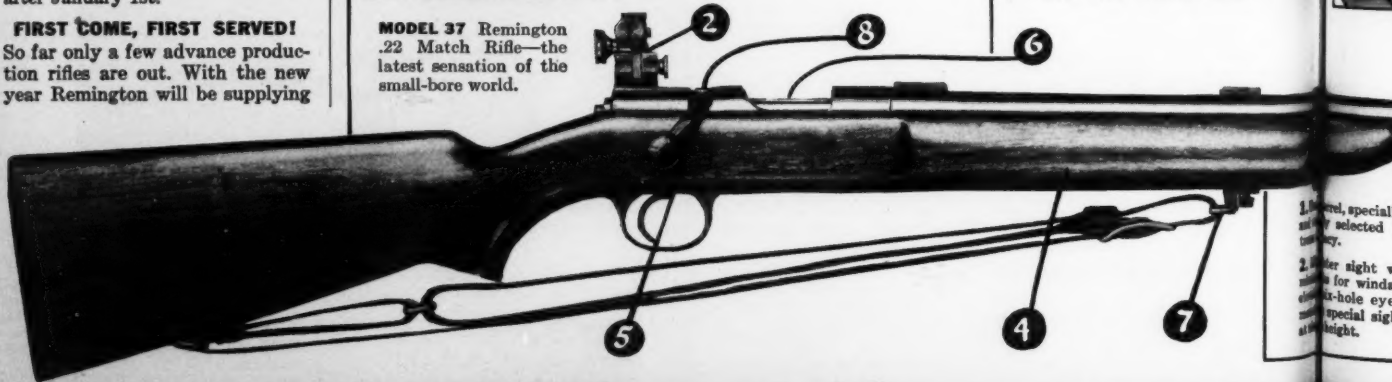
the Individual Dewar, Wimbledon and State Championship. This is an aggregate figured over the entire year! Johansen is a consistent shooter of VEEZ 73—a consistent winner—and living proof of VEEZ 73 consistent accuracy.

PALMA MATCH SHOOTERS "RIDE 'EM" AT TEXAS SHOOT

DALLAS, Tex.—The winning scores at the Southwestern Small Bore Rifle Matches are no indication of the conditions under which most of the events were shot. It rained so hard they had to dig a trench clear over to the Trinity River to drain the firing point. But that didn't stop L. A. Pope, J. R. Martin and R. D. Campbell from plunking them in. As far as these Palma Match shooters were concerned, it wasn't raining rain, it was raining X's. Here are the details of another great Palma Match victory:—

SOUTHWESTERN SMALL BORE MATCHES

50-YARD SPECIAL MATCH
Winner—L. A. Pope, Los Angeles
200-17X Palma Match
WATSON'S TROPHY MATCH (30 meters)
Winner—J. R. Martin, Wichita Falls
200x200 VEEZ 73
SEARS-ROEBUCK TROPHY (100 yards)
Winner—R. D. Campbell, Ft. Worth
300-16X Palma Match
COLLUM & BOREN TROPHY (30 yards)
Winner—R. D. Campbell, Ft. Worth
300-27X Palma Match



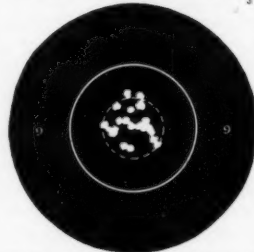
1. Barrel, special... selected...
2. Sight... for wind... hole eye... special sight... height.

ROY MEISTER GOES "CLEAN"
THROUGH ALL EVENTS OF
NORTHWEST BISLEY MATCHES

ROY E. MEISTER and a sample of his handiwork... a 10X possible fired at 50 yards in The Codrington match.

SEATTLE, Wash.—Palma Match* ammunition helped Roy E. Meister of Seattle, Wash., realize an ambition of many years' standing. He writes, "I accomplished one thing I have always wanted to do by shooting all the matches on the program and staying in the ten ring. This is the first time in the Northwest that anyone has fired through our matches on the Bisley program without making a nine. Add to this the fact that all my

THE TARGET OF THE MONTH



20X POSSIBLE AT 100 YDS. Here's a composite of a breath-taking group made by Ralph W. Miller, Pasadena, Calif., with VEEZ 73. Writes Mr. Miller, "... am mailing two targets shot at 100 yds. in club competition, making to the best of my knowledge, the second available 20X possible in competition. (The first 20X was shot by Les Pope—also with VEEZ 73.) I have never seen anything that shoots like this stuff does in most of our guns."

Each month Remington will reproduce what is in their opinion "The Target of the Month." This target may be fired in a match or in practice. Only conditions: 1. It must be fired under N.R.A. conditions at any standard distance. 2. Be witnessed by two people. 3. Be fired within one month previous to the time it was mailed to us. 4. Be fired with a Remington ammunition or rifle. Send in "hot" targets to Frank Kahrs, Remington Arms Company, Inc., Bridgeport, Conn.

sighting shots were tens and you can see why I place my faith in good old Palma Match..."

Meister scored possibles in The Codrington, The Kohlapore, The Vickers and The Wildegose events. His first target at 50 yards was a 10X possible, to our knowledge, the first 10X that has ever been recorded in these open State matches.

400-29X SHOT WITH KLEANBORE
IN PENNSYLVANIA STATE SHOOT

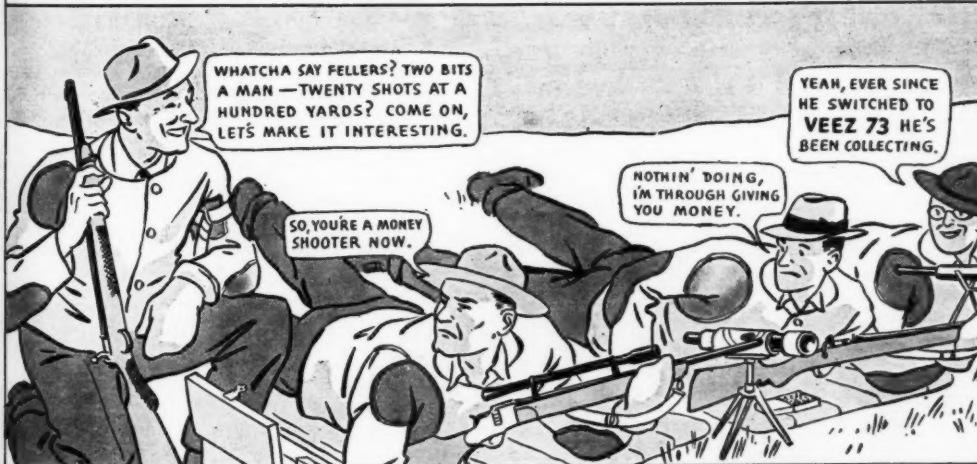
INDIANA, Pa.—Sheridan E. Brown, using Kleanbore in the 2-man Short Range Event at the Pennsylvania State Matches turned in a 200 with 14 X's at 50 yards and a 200 with 15X's at 100 yards. The composites illustrated give you



SHERIDAN E. BROWN shot 400-29X's with KLEANBORE. Composite at left shows his 50 yard group, right, 100 yard results

some idea of the way Kleanbore will group in the hands of a good shot. Brown certainly showed them how it's done!

THERE'S ONE IN EVERY CLUB... MONEY SHOOTER



MODEL 37 FEATURES

1. Level, specially rifled barrel selected for accuracy.
2. Sight with 1/4 inch hole eye-piece, special sight base height.
3. Redfield front sight. Can be removed from special matted ramp by turning locking nut.
4. Target stock with pistol grip, semi-beaver tail fore-end and sharp checkered steel butt plate.
5. Adjustable trigger pull... velvet smooth action.
6. Dummy magazine with special loading platform for single loading plus regular five-shot magazine.
7. Adjustable front-swivel and Carney sling.
8. Heat treated working parts.

CLEANS UP MAINE STATE SHOOT
WITH KLEANBORE*

AUBURN, Me.—Shooting Kleanbore, Weston A. Young of Thomaston, Me., in a splendid performance scored 576 (despite a fish-tail wind at 200 yds.) to win the Maine State Championship. He also won the 50-yard re-entry match with 300—25X and the State 100-yard trophy with 199—11X.



Weston A. Young

POSSIBLES and
IMPOSSIBLES

by FRANK KAHRS



The boys at Remington are having plenty of fun these days picking "The Target of the Month." I'm getting so many good ones shot with VEEZ 73

and Kleanbore that sometimes it's a mighty close race. For instance, E. C. Hamley, Jr., of Glendale, Calif. sends me this beauty that he punched out at 100 yards with the aid of some VEEZ 73.

All shots well inside the dotted circle... a 10X among 10X's. And there's that handsome 29-16" group at 200 yards that Karl A. Edburgh of Berwick, Pa. sends in—a target that he fired in a shoulder-to-shoulder competition at the Central Pennsylvania Rifle Club's 5th Annual Tournament.

Speaking of groups, this old war-horse can't resist telling his friends about something he did himself a la muzzle-and-elbow rest. With a Model 37 and VEEZ 73 I collected ten shots into a hundred yard group that measures just 1/4" extreme spread. That Model 37 and VEEZ 73 combination is just about unbeatable!

Here's something you fellows who are using Kleanbore Hi-Speeds on pests or game ought to know. A chap by the name of P. Ashby who lives in Middlebury, Vt., sends me a 10X 15-shot possible that he made at 100 yards with Kleanbore Hi-Speed and a Remington "Sportmaster" (Model 341). You figure it out!

One place I'm going to attend a rifle match at one of these days is Arizona. I have a lot of good friends there and owe them a visit—especially when I see that a whole flock of winners in the Arizona Inter-club Matches at Flagstaff used VEEZ 73.

One of our good friends advised us the other day that at the laying of the corner stone of a fine new city building in Cedar Bluffs, Nebraska, one of the committee in charge of the affair placed in a sealed copper box a number of articles which included a box of Kleanbore .22 Cartridges. A note of instructions was attached to notify the Remington Arms Company when in time to come the box might be again opened.

Our friend who advised us added that he would bet they will shoot if it is a hundred years from now. Well, we won't be around then, but we are also willing to make a little bet that they will function 100%. Any takers?

I'm getting to the bottom of my column, but I've made sure there'd be enough room to thank shooters C. L. Wood of Heyworth, Ill. and Arden W. Mowry of Greenville, Pa. for the swell targets they've sent in. I wish these American Rifleman pages were as big as billboards so I'd have room to show all the fine things my shooting friends send me.

*PALMA MATCH and KLEANBORE are trade marks of Remington Arms Co., Inc.

open the bolt. I believe the best method to employ in opening the bolt is one which allows you to use every means available to facilitate the operation. Bear these thoughts in mind, and follow them carefully. When opening and closing the bolt, keep the rifle at the shoulder. With the left hand, twist the rifle down and to the right, at the same time opening the bolt with the right hand, with an upward motion. Slam the bolt back as far as it will go, and close it just as fast as possible. Then check your position. If you have shifted, find out why. First, did you move your elbows? Did your body slide back too much? Find out and check these things while they are fresh in your mind. Watch every step that you take, and be on the lookout for errors. The rewards of careful checking lie in perfect scores. Check your position and make it as solid as Gibraltar. Practice your timing until you can open the bolt and close it in two seconds.

Another stunt that has proved of value in practicing is to tie the trigger to the trigger-guard with a piece of string. Then practice opening and closing the bolt just as fast as you can. When you are able to open and close the bolt about 100 times per minute, you have developed sufficient speed to proceed to the next step.

Before we go any further it might be well for you to provide yourself with several clips that fit your particular rifle. How well I remember the first time I tried to change clips in the midst of a heated string of rapid-fire! The cartridges flew in all directions, all over the turf, and I lost thirty points. To prevent this from happening to you, keep the following points in mind: Clip-changing will make or break your rapid-fire. If you fumble you will lose precious time. When changing clips remember that smooth, unhurried timing will be faster than a quick, hurried fumbling movement that spills the cartridges all over the landscape.

Let us assume that you have fired the fifth shot and are about to change clips. Draw the bolt back as far as it will go, and take a clip out of your belt just as smoothly as possible. Insert the clip in the clip slots, and with your thumb press the cartridges down into the magazine. Then slide your thumb along the top cartridge until they are all lying flat in the magazine. Now close the bolt. Watch the top cartridge feed into the chamber—but only the top one. This is what is called “chamber-gazing.” By doing this on the

first shot of the second clip you know definitely whether or not the shell has been loaded into the rifle. This will prevent you from having an empty chamber or “misfire.” There is nothing so embarrassing as to have an alibi prove to be an empty rifle. It makes you look foolish, and in the eyes of a great many range officers you are incompetent.

Before we do any actual firing let us check up a bit and see if we have sufficient training to go to actual range practice. Be your own judge, and check up on the following points: 1—Good position; 2—Wide wheelbase; 3—Relaxed position; 4—Correctly-adjusted sling; 5—No chamber gazing; 6—Rapid assuming of correct position; 7—Counting of shots; 8—Proper time interval; 9—Smooth changing of clips; 10—The maintaining of the proper position throughout the entire string. If you believe you have progressed sufficiently in these respects, then tackle actual range firing.

Before we can do any shooting we have to go through several preliminary steps that will aid us in the final accomplishment of our aim. On a hot day the sun glares down on our sights, to overcome the effects of which we deposit on the sights a smooth coat of dull black, which is termed “blackening the sights.” Any method that will deposit a smooth, even coat of black soot will do. This is one point that if neglected will lose several points in the score. Remember it.

Now that you have blackened your sights to your satisfaction, we will try a string. We will start slowly, and fire ten shots at the target. Take your time and make all of them good. If it takes you ten minutes to fire ten shots, what of it? Have the target marked, and see where

the group is. By this I mean that your ten shots will be marked on the paper somewhere. They should be in a compact group. I assume that you know your own rifle well enough to bring the center of this group into the center of the bullseye. After you have adjusted your sights, try another string. This time hold carefully, and squeeze every shot. Shoot slowly, and try for perfection. If you have adjusted your sights correctly you will now have a possible.

But this perfect string took considerably longer than the time allowed. Our problem now is to cut down the time, and yet hold our perfect score. We must not sacrifice accuracy to speed. We can gain time in bolt manipulation and in clip changing, but under no circumstances must we hurry our sight picture or trigger squeeze. Don't make the fatal mistake of sacrificing a bullseye to speed.

The first time you have to shoot against time, set yourself a goal to strive for. Say to yourself: “I am going to make five bulls this string.” Concentrate upon those five bulls to the exclusion of everything else. Take the whole minute to make them. Now you are 50 per cent perfect. Every time you practice, make your goal harder: try for six bulleyses, then seven, eight, nine, and the possible.

Eight fives are forty, two fours are eight. Forty-eight points out of fifty is darned near perfect, and you are on the way to that pinnacle that is the aim of all shooters: the National Distinguished Marksmanship Medal. While I do not promise that anyone who reads this article will reach the glittering heights of such an exalted position, stranger things have happened. Bear this in mind: when you have developed your rapid fire to the point where you can be almost sure of the final score within one point, you can really take your place with the experts of your neighborhood. Results count. The judges are not interested in alibis—they want results.

Give them results.

A final word in closing: Do not expect to accomplish the impossible. The expert shooter is very deliberate about everything, and sometimes has been called the laziest thing on earth. But he still comes through in the pinches. He can be depended upon. Therefore, establish a routine of performance that will cover everything. Common sense and perseverance are all that are required. Go to it and do your best, and you won't have to worry about the results.



The Percussion Plains Rifle

By T. B. TRYON

THE DAUNTLESS beaver trappers of the early nineteenth century who penetrated the plains and mountains of the unknown West, from the semi-tropical valley of the Nueces to the snow-clad defiles of the northern Rockies, were entirely dependent upon their rifles for daily sustenance as well as protection against the attacks of roving Indian war parties. This vanguard of the advancing whites, often hundreds of miles from any source of ammunition, was loath to abandon the time-tried flint ignition of their rifles for anything so unreliable as the detonating system was at this period; for the copper detonating cap, invented in 1816 by one Joshua Shaw, sportsman of English birth and resident of Philadelphia, was still in the experimental stage. When tightly fitted to the cone or tube, the cap could be exploded under water, yet the detonating powder would dissolve to a paste when exposed to dampness for any length of time. Furthermore, both wood and metal of a rifle were soon literally eaten away by the corrosive action of the oxymuriate of potash which, with gunpowder or some of its components, formed the early detonating compositions. For many years the plainsmen continued to favor the earlier type of ignition, for wet powder could be dried and flints were in no way affected by water; nor was there any fumbling with minute caps—which if once wet were useless.

Then an "anti-corrosive percussion powder" for detonating caps appeared in England, in 1824. In this composition, kept secret by the guild for many years, fulminating mercury replaced the destructive oxymuriate of potash. This was combined with portions of sulphur, charcoal, or saltpetre, which increased the flame and lessened the force of the explosion, as in the earlier composition. A white powder composed of one hundred parts of fulminating mercury and sixty parts of saltpetre was eventually deemed most efficacious. Waterproofed with a coating of a solution of sealing wax and spirits of wine, this composition was the basis of the practical percussion cap which appeared in this country about 1830.

The advantages of this new cap, which resisted the effects of dampness and acted more certainly than did the flintlock under favorable conditions, were not ignored by the plainsmen. Mention of this was made by Josiah Gregg, Sante Fe trader who crossed and recrossed the plains many times during the third decade of the nineteenth century. Referring to the high winds of the plains, he says: "It is for this

reason, as well as on account of the rains, that percussion guns are preferable upon the prairies, particularly for those who understand their use. The winds are frequently so severe as to sweep away both sparks and priming from a flintlock and thus render it wholly ineffective." There had also been invented an ingenious device which was known as a cap magazine and which greatly facilitated priming, especially when the hands were cold or gloved. With the more objectionable features removed, the plainsman was gradually weaned from his trusty flintlock, until by 1838 or '40 the percussion system was in general use in the far West.

With the general adoption of the percussion system came the short, heavy, large-caliber plains rifle. This severely plain weapon, of rugged construction, was designed to withstand the ill treatment incidental to innumerable skirmishes in the hands of those hardy wanderers of the trackless plains and mountains. It was, in short, a modification of the Kentucky rifle, and was capable of accurately delivering a heavy ball with great shocking power at long range. The round ball was universally used on the plains in preference to the picket bullet—approved conical missile of the fine American target rifles of the period. This was due to the fact that considerable time and care were required to seat the conical projectile with the vertex concentric with the bore, inasmuch as the circumference of the base was the only bearing point; and unless properly seated, this missile was far less accurate than the round ball. On the other hand the spherical ball, enveloped in a greased linen patch, was quickly loaded, consistently accurate, and incapable of keyholing. When necessary to reload for a hasty shot the linen patch could be dispensed with, which was not the case with the picket bullet if any degree of accuracy were to be had. Therefore, the false muzzles, telescopes, and picket bullets of the superbly accurate target rifles found no place beyond the outskirts of civilization. Simplicity and dependability were the requirements of men whose very lives depended upon the efficiency of their weapons.

The plains rifle usually weighed from twelve to fifteen pounds, most of the weight being in the 34-inch barrel, with its metal rib from which depended the ramrod pipes. The half stock, noticeably straighter and heavier than that of the Kentucky, was of either maple or black walnut. The use of set triggers was universal, and the bar-action lock predominated. The grooves of the rifling were very

narrow and the lands very wide, inasmuch as it was discovered that the puckers of the greased linen patch formed a tighter gas check in narrow grooves. Conditions on the plains required an accurate long-range rifle which projected a missile of great shocking power; hence the caliber was usually from .50 to .53, the piece being sighted-in for 200 yards. A barrel sufficiently heavy to absorb recoil and eliminate the slightest whip was necessary to achieve the desired range and accuracy with the half-ounce ball propelled by a large charge of powder. Consequently the side walls of the relatively short barrel were invariably equal, and frequently greater, in thickness than the diameter of the bore; which accounts for the enormously heavy barrel and seemingly excessive weight of the typical plains rifle. Due to this weight the recoil was not disagreeable when the rifle was properly charged.

It was customary for the plainsman to carry the piece across the pommel of the saddle, suspended in a broad band of leather and balanced by the knees. Under these conditions, with the burden borne by the horse and not the man, there was no limitation to weight, though the barrel was necessarily short enough to be conveniently carried, fired, and reloaded by the mounted man. However, the plainsman habitually dismounted and utilized some sort of muzzle rest to make a long-range shot, whenever time permitted. A favorite method was to rest the barrel across the saddle, though most anything sufficed for a rest—the edge of a coulee, a barricade of packs, etc. Or, when nothing better offered, the ramrod was planted in a vertical position with the left hand grasping it near the top, and the rifle barrel rested over the left wrist; the rifleman kneeling on one knee to fire.

The common open rear sight proved to be inadequate under certain atmospheric conditions in this new environment—an environment which had served to bring about a modification in rifle stocks and barrels, and had fostered the adoption of the percussion system. For during mid-day on the burning plains, with the sun glaring in all its dazzling brilliancy, the reflection of the solar rays blurred the notch of the rear sight to such an extent as to render it impossible to draw a fine bead. To overcome this difficulty there was cut into the top of the conventional rear sight bar, in the middle, a hemispherical cavity, through which the usual sight notch was filed; this simple device practically eliminating glimmer. Such a sight is shown in one of the accompanying drawings.

Many ingenious devices were employed to facilitate the loading of the percussion-lock rifle. Powder horns with adjustable chargers similar to those of the copper flasks of the period were often used. Inverting the horn with the forefinger over the opening of the charger and the thumb on the shutter, served to fill the charger with the proper amount of powder, which was transferred to the bore of the rifle. When in a scrimmage at short range, or with running buffalo, the bare ball was dropped down the bore and was seated by

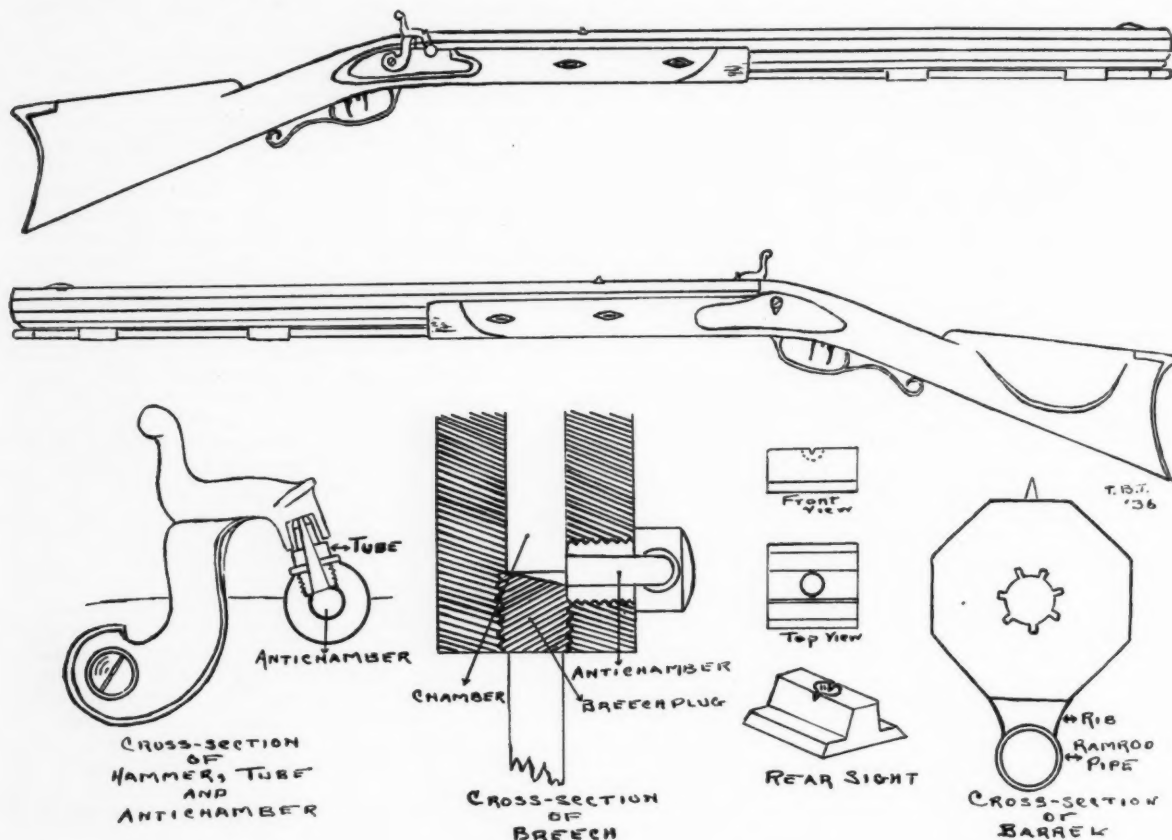
of the magazine, which latter held some forty caps.

The tube wrench was another accessory of the percussion-lock rifle. One end of this tool was formed into a screwdriver with which to dismount the lock, while the other was recessed to fit the square shoulder of the tube, and served to remove the latter from the antichamber. A copper wire pick was also carried to clear the passage of the tube.

The .53-caliber rifle shown projects a 218-grain ball and when charged with

open sights—say 250 to 300 yards. For the benefit of those who may possess such rifles and be interested in shooting them, the following information and suggestions relative to their care and management are offered.

It is necessary to use FFFg powder for the best results with this rifle. In the first place, though the bore is large the barrel is relatively short, therefore when a large charge of slow-burning coarse-grained powder is used the powder will not be consumed before leaving the barrel. Further-



jarring the stock, the muzzle being depressed only at the moment of firing. When the plainsman was forced to reload hastily, but at the same time required accuracy, he resorted to the loading stick, which held four or five balls ready-patched, and was carried for just such an emergency. With the rifle charged with powder, the loading stick was placed over the muzzle and the patched ball seated in the bore by steady pressure on the ramrod. In using the aforementioned cap magazine, shown in one of the illustrations, the exposed cap was placed on the tube and the box drawn sidewise, leaving the cap in place; an arm actuated by a spring forcing another cap into position in the gooseneck

191 grains of FFFg, is sighted-in for 200 yards; and it will group inside of a 7-inch circle anywhere along its line of flight up to the above range. That is, when holding at six o'clock on a 7-inch circle at 200 yards, the ball will cut the edge of the circle at twelve o'clock at about 115 yards, and at six o'clock at 200 yards. However, to counteract the trajectory curve, as well as possible human error, a fine bead is drawn at mid range, while the line of sight is focused above the point of impact at all ranges beyond 200 yards. It is primarily a big-game rifle designed to bring down buffalo, antelope, or man up to ranges beyond which it is impossible to place a ball with any degree of accuracy with fixed

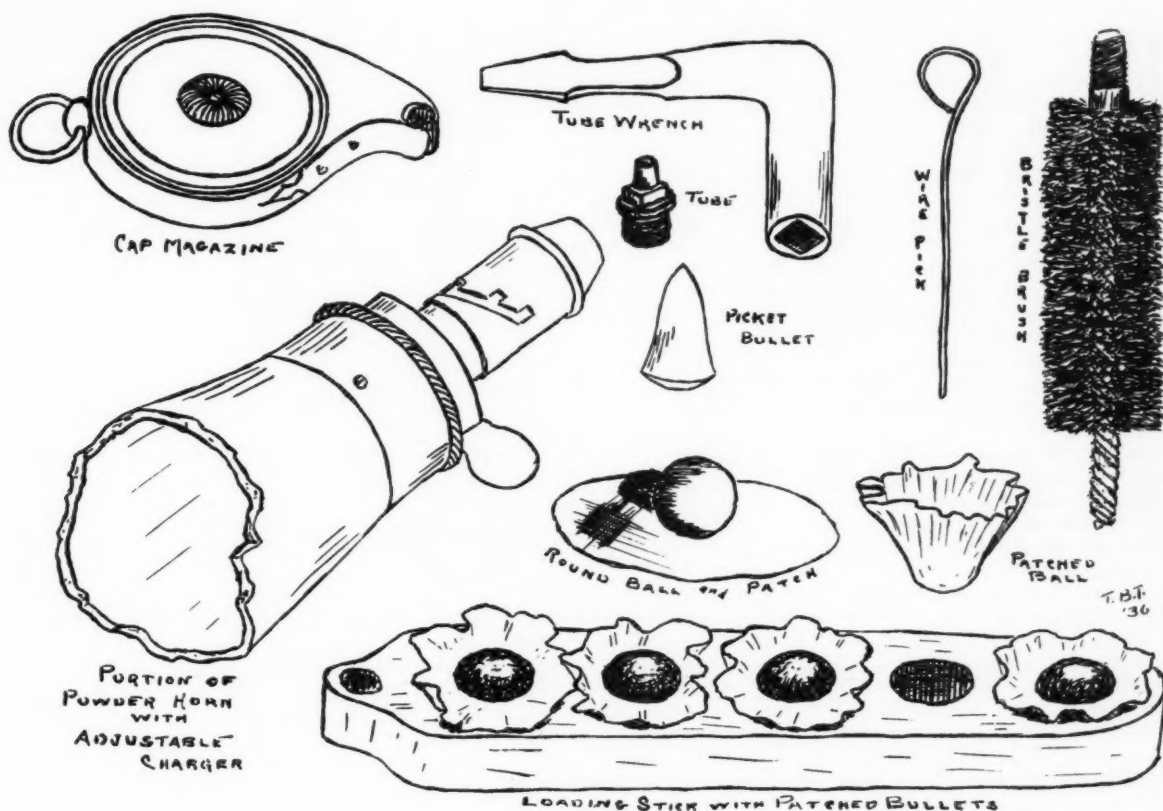
more, the percussion lock is difficult to keep clear, and one will experience many misfires when using coarse powder, which fouls excessively and soon plugs the antichamber.

More percussion-lock rifles are seen at matches than flintlocks, yet with the percussion system misfires are more frequent and more troublesome. There are a few points to be borne in mind when loading a percussion-lock rifle. Before charging for the first time, explode a cap on the tube, as the force of the blast will clear the dust and oil from tube and antichamber. Then blow through the bore to make sure the passage is clear, before introducing the powder charge. In fact the only way to keep the antichamber open on the range or

in the field is to blow through the bore, and this should be done each time before reloading. If the piece should misfire, force the wire pick through the tube and into the antichamber, place a few grains of powder in the passage, and recap. If this fails you must resort to the wrench and remove the tube. Force the wire pick through the antichamber, and work it about; then prime with a few grains of powder and replace the tube, after making sure the latter is open. When loading leave the hammer down to confine the powder in the tube, and place the cap on the tube last.

sure of the heavy charge will throw the hammer back, permitting bits of copper cap to fly in all directions. A weak mainspring will also permit of this, and it is well to have such a spring replaced if possible, which will also insure positive exploding of the cap. Examine the cupped head of the hammer to ascertain whether it comes well down over the exploded cap, and if it does not have the matter remedied, as otherwise brittle caps may fly out and cause nasty wounds to the hands, face, or even eyes. At any rate, always purchase the heaviest foil-lined caps, as they are less apt to fly

the heat of which will aid in drying the interior. Do not fail to use cold water to loosen the fouling, as hot water tends to cake the residue and render it difficult to remove. Finally, coat the bore with Hoppe's No. 9, which will run into the antichamber and tube if the weapon is left standing upright. Never use heavy grease for this purpose, as it is hard to remove. Upon taking the piece up after it has been laid away with Hoppe's, merely wipe the rifling with a dry swab. What little of the liquid is left in the chamber and antichamber will hardly be sufficient to prevent



When wiping the bore after each shot with a bristle brush, fouling is apt to be forced into the antichamber, which may become so clogged as to necessitate the removal of the tube to permit clearing it. To prevent this, cut the bristles from the lower end of the brush for a quarter of its length. With this arrangement the wire end of the brush strikes the breech plug, while the bristles are kept back in the upper part of the space occupied by the powder charge; the rifling thus being cleaned without the antichamber becoming filled with residue.

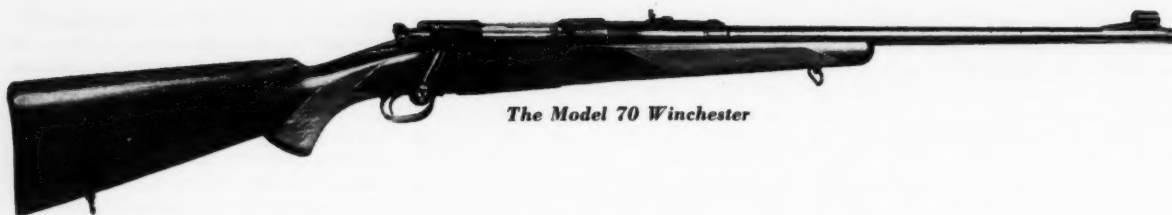
Examine the passage in the tube to make certain that it is not too large at the top, but increases in size downward. Should the passage be too large, the breech pres-

sure of the heavy charge will throw the hammer back, permitting bits of copper cap to fly in all directions. A weak mainspring will also permit of this, and it is well to have such a spring replaced if possible, which will also insure positive exploding of the cap. Examine the cupped head of the hammer to ascertain whether it comes well down over the exploded cap, and if it does not have the matter remedied, as otherwise brittle caps may fly out and cause nasty wounds to the hands, face, or even eyes. At any rate, always purchase the heaviest foil-lined caps, as they are less apt to fly

about. Percussion caps may be procured at most large sporting goods houses, and the sizes are designated by number, rifle caps usually being No. 10 or 12. The following method will expedite the cleaning of the weapon and obviate the necessity of dismounting the barrel from the stock. Secure a piece of rubber tubing which will fit the rifle tube snugly. Press one end tightly on the rifle tube, and place the other end in a basin of cold water. Partly fill the rifle bore with water, and scrub the rifling with a tight-fitting swab on the worm of the ramrod. It is possible to pump water into and out of the bore in this manner, thereby effectually loosening and expelling all fouling. Repeat the operation with a clean swab and boiling water,

ignition, although it is well to take the precaution of exploding a cap on the tube, the hot blast of which will dry the antichamber and tend to guard against misfire.

More accurate American rifles existed in the percussion period than the typical plains rifles made in the shops of such gunsmiths as Golcher & Butler, Hawken Brothers, J. Henry & Son, Mills, and Demmick; yet the excellence of these weapons was acknowledged by frontiersmen throughout the Western country. Plain and dependable, they were the most accurate and practical hunting rifles that the skill and ingenuity of the American rifemakers had thus far devised—the result of a century of experience.



The Model 70 Winchester

The New Model 70 Winchester

By F. C. NESS

THE Model 54 Winchester has passed into history. No more will be made except in .22 Hornet caliber. The New Year of 1937 will usher in an improved Winchester bolt-action rifle, the new Model 70, which will supplant the old Model 54. Practically all criticisms which have been aimed at the old model have been met in the design of the new model. Gone is the "canoe-paddle" forestock, the high-angle bolt handle and vertical safety, the sear bolt-stop, the much-criticized trigger, the solid floor plate and poor trigger guard. Instead we have an excellent modern rifle with the same low receiver line and a much lower action lever to permit a low position of any telescope sight.

The firing mechanism is a new development. The trigger is machined out of a single forging and is so designed with the sear that, together, they give a very short, crisp let-off with no military take-up and with scarcely any movement of the trigger.

The new bolt stop, working with the left-hand locking lug on the forward end of the bolt, retains the bolt so that the sear no longer acts as a bolt stop. This bolt stop operates vertically. We found the external bolt-release plunger, on the left side just behind the rear edge of the receiver. It is convenient and effective without being obtrusive.

The new design safety lock operates in a horizontal plane. The lever lies straight in the firing position. It has two other positions. The intermediate position is about 30 degrees to the left of "OFF." In this position the firing pin is locked but the bolt is not, permitting easy removal of the bolt.

The "ON" or fully locked position, is at the limit of its forward movement on the left side. When set in this position

the firing pin is retracted from the sear and the bolt locked shut. This safety lever is operated with the tip of the thumb. Set at "intermediate", we found it easy to throw this safety while raising the rifle to the shoulder.

The bolt handle is designed with a new bend which allows low mounting of a telescope sight. The knob is carried rearward, positioning it opposite the trigger. We found the manipulation easy, smooth and fast. When raised the lever projects at a 45° angle from the side, not from the top.

The speed lock on the Model 70 is quicker than that on the M-1903 rifle; the firing pin has only one-half the travel. The cocking cam is shortened 50%. The firing pin will withstand "dry firing" without injury. We found the striker travel to be a scant $\frac{3}{16}$ inch.

The magazine is made with a hinged floor plate. We found floor plate and magazine could be easily and quickly released by pressing a projecting plunger in front of the trigger guard.

The stock has a wider fore-end, rounded but approximating the beavertail style. We found the forestock a great improvement in feel. It is over 18½ inches long and measures 16½ inches from the trigger to the swivel. The maximum gripping width is 1-¾ inches, tapered to 1-½ inches at the swivel.

Special safety features have been incorporated in the design of the Model 70 by which the firing pin is mechanically

prevented from being blown out by a pierced primer. In addition two large vent holes in the forward end of the bolt allow ample gas outlets.

The Standard Model

The barrel has a ramp front-sight base. Option of 24-inch or 20-inch lengths, except in caliber .220 Swift, which is standard only in 26 inch.

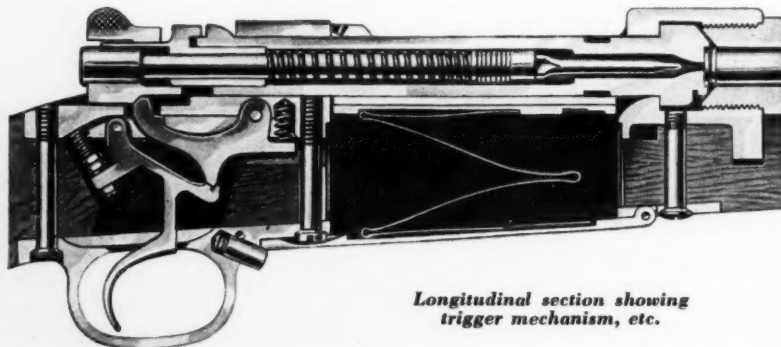
The standard stock dimensions are: Length of pull, 13½ inches; drop at comb 1-⅝ inches, and at heel, 2-⅝ inches. Grip and fore-end are checkered.

The sights are: Front, Lyman $\frac{5}{64}$ -inch gold bead, mounted on ramp. Rear, Winchester 22G open sporting. The receiver is drilled and tapped for the Lyman 48W-JS sight, and the rifle is furnished with this sight at an extra charge. All front sights are equipped with sight cover, except on the Bull gun. The magazine holds 5 cartridges. The trigger guard, of forged steel, has a new shape. Swivel bases for sling strap are attached.

National Match, Target Model and Bull Guns

The barrel is floating type. No front band, forearm screw or escutcheon. National Match rifles come in 24-inch length; Target model (medium heavy) in 24-inch only, with .220 Swift, 26-inch only; Bull gun, 28-inch only; standard in .30 Government '06. The National Match rifle has Lyman 17A front and 48-WJS rear. Bull gun same as National Match. No ramp sight-base on Bull guns.

The stock, a new design with full pistol grip, has a full, fluted comb and wide, beavertail fore-arm similar to style on Model-54 target models. No checkering. The sling strap is a



Longitudinal section showing trigger mechanism, etc.

1¼ inch leather sling, treated with neats-foot oil and equipped with new-design, bakelite, Albree keeper.

A chromium-plated, metal, forearm-adjustment-base is located on the underside of the forearm. This is controlled by the sling-strap, swivel-bow assembly, allowing various positions in holding. Sling comes attached on Target Models and Super Grade rifles. The dimensions, with Lyman sights attached, are: length of pull, 13¼ inch; drop at comb, 1½ inch; drop at heel, 1-11⁄16 inch; pitch down, 3 inches. Girth of grip, 5-9⁄16 inch. Center of trigger to end of grip, 3 inches; drop from center of bore, .50 inch at comb; .78 inch at heel.

I am particularly pleased with the new-low-line bolt-handle, because I insist upon having the hunting telescope right down on top of the receiver where it must be placed for efficient employment. I am also pleased with the new forestock, the new trigger mechanism, the new bolt stop and the removable floor plate.

Many of us recommended the low-line safety and action levers, and also a slightly longer action to permit magazine-loading of target cartridges which have an increased overall length. In the sample I find less than ¼-inch length-clearance for the .30-'06 cartridge in the magazine well. The M-70 well is about ⅜-inch too short for the .280 Ross cartridge which has an overall of 3.516 inches against 3.328 inches for the W. R. A. 180-grain cartridge in .30-'06 caliber. The Winchester Wimbledon Cup target cartridge has an overall length of 3.398 inches in .30-'06 caliber and of 3.594 inches in .300 Magnum caliber.

The new Model 70 will be made in .250 Savage, .220 Swift, .257 Roberts, .270 Winchester, 7-mm. Mauser and .30-'06 calibers. Since the present production, first to come through, is in .30-'06 caliber our sample rifle is of that caliber, least accurate of the above list. The improved rifle costs but very little more than the old model. The regular list price of the standard rifle equipped with open barrel-sight was \$59.75 for the Model-54 and is \$61.25 for the Model 70.

We immediately transferred our Fecker scope bases from the Model-54 to the Model-70, the new model having screw holes already provided in the top of the receiver hood for the purpose. We used our 8X Fecker with 1⅞-inch objective in

Fecker target mounts. The Model-70 handled beautifully in all positions and the factory trigger-pull seemed excellent. Our first zero-group, fired from sitting at short range, indicated good accuracy. The target mounts place the line of sight unnecessarily high on this improved action. A properly mounted hunting scope would be much better, of course, for a secure and comfortable hold.

At 200 yards my first five shots from bench rest went into less than 2 inches with F. A. 1933 Service ammunition. I tried five from prone with sling which position changed the impact 3 inches low and an inch to the right. Five more from sitting with sling did not affect the impact except to lower it less than ½ inch. The two groups measured 4.32 and 5.15 inches, respectively, at 200 yards.

Barr also tried it prone with sling and shot into 4.72 inches, his group-impact being an inch higher than mine. Barr also tried five shots from the bench rest and got a group of 4.98 inches which landed an inch lower than my first group similarly fired.

Barr also tried ten

Upper rear view of action



Most of our groups were formed with a flier which enlarged them to the sizes quoted above, all of which were measured between centers of the widest shots. Most of our 5-shot groups had four shots in 3 inches or less, and our 10-shot group had nine shots in 3.08 inches. Figuring all shots fired from prone or rest at 200 yards, the 40 rounds of M-1 Service ammunition averaged less than 4¾ inches per group and the 15 rounds of W. R. A. sporting ammunition averaged less than 4½ inches.

Outside of the meager length and cartridge-overall clearance of the magazine, the only disappointment I experienced in my initial examination of the new Model-70 action was the lateral safety. While this works fine in connection with iron sights or target scopes it is inconvenient with low-mounted hunting scopes. In fact, when a wide-field scope which has enlarged ends is properly placed close to the top of the receiver it is practically impossible to operate the Winchester safety at all.

I find the practical limit which permits employment of this safety is ⅞-inch clearance and that means without gloves and the acceptance of some inconvenience. That much clearance between a small, straight, ¾-inch scope and the safety lever leaves a clearance of ⅜-inch at the bolt handle, ⅞-inch clearance at the hood and ⅝-inch clearance at the bridge, the base of the new bolt handle projecting ⅞ inch above the bridge in raised position. With a ¾-inch Zielklein scope the same low limit of ⅞-inch clearance would raise the line of sight about ⅞ inch, while the enlarged ends of the Zielyt model and the bigger Zieivier and Dilytan scopes would raise it still more.

In the first example, the lowest line of sight with the ¾-inch scope is 2⅞ inches above the comb. With the Zielklein scope the drop would be about 2¼ inches, and

shots from prone rest, getting a group of 4.20 inches and an impact only ½-inch under our original zero at 200 yards.

So far we had noticed a maximum change in impact of only 1-½ minutes of angle. We now removed the sling and rested the forestock on the oak cross-piece that fronts our portable bench rest. Barr got two groups in this manner which averaged 5 inches, but the impact of both was 4 inches high. Checking with W. R. A. 180-grain (pointed expanding) sporting ammunition, Barr's group measured 3.72 inches and its impact was normal. My own groups with this load (4.80 and 5.0 inches) landed 6 inches lower when using the sling.

With the wide-field scopes, which have eye pieces of 1¼ and 1½ inches, the comb-drop from the line of sight would be 2¾ and 2½ inches, respectively. Therefore, the new Winchester safety nullifies a portion of the advantage offered by the new, well-designed Winchester bolt handle. A considerable number of hunters will not be so restricted, because they habitually disregard the safety and instead keep their cartridges in the magazine, keeping the chamber empty until they are ready to fire. Such sportsmen will have their hunting scopes placed lower than the minimum-limit position mentioned above, to barely clear the hood and the base of the bolt handle.

Digest of State Firearms Laws—Part I

(Parts III and IV will appear in the December Issue of The American Rifleman)

This table gives the major provisions of all state laws now in force which affect the use and ownership of handguns. The "Uniform Firearms Act" shown at the head of the table is the model state law which was drafted by the American Bar Association with the aid of the National Rifle Association. Where the initials U. F. A. appear in the body of the table it means that the provisions for that state are similar to those listed for the Uniform Firearms Act.

Uniform Firearms Act (See note above)	Firearms with barrels less than 12 inches	No person shall carry a pistol in any vehicle or concealed on or about his person	Police officers, soldiers and sailors, N. R. A. members while at or en route to places of assembly or target practice; government officials, manufacturers, dealers and gunsmiths in course of duty; any person carrying a pistol from home to business, etc.	Optional	Yes	Judge, police chief, sheriff
STATE	ARMS COVERED	CONCEALED WEAPONS	PERSONS EXEMPT	PENALTIES	LICENSE TO CARRY	SECURED FROM
Alabama	U. F. A.	U. F. A.	U. F. A.	Maximum: \$500; 1 year.	50c per year.	Probate judge, chief of police, sheriff.
Arizona	"Pistol or other firearm."	Prohibited.		\$20 to \$300; 10 to 30 days.	None provided.	
Arkansas	All pistols.	Prohibited, openly or concealed.	Persons "on journey or on own premises."	\$50 to \$200; 30 days to 3 months.	None provided.	
California	U. F. A.	U. F. A.	U. F. A., target shooters and licensed hunters or fishers.	As misdemeanor.	Yes.	Sheriff, chief of police, police commissioners.
Colorado	U. F. A.					
Connecticut	U. F. A.	U. F. A.	U. F. A.	Maximum: \$1,000; 5 years.	\$1.00 per year; renewal 25c.	U. F. A.
Delaware	U. F. A.	U. F. A.	Peace officers.		\$2.00 per year.	Clerks of the peace.
District of Columbia	U. F. A.	No person shall carry concealed.	U. F. A.	Maximum: \$1,000; 1 year.	Yes.	Superintendent of police.
Florida	Pistol, repeating rifle, or other weapon.	Prohibited.	Peace officers.	\$100 to \$500; 3 to 6 months.	Yes.	
Georgia	Pistol or revolver.		Peace officers.	Misdemeanor.	50c.	
Hawaii	U. F. A.	U. F. A.	Peace officers, etc.	Maximum: \$500; 1 year.	Yes.	Sheriff.
Idaho	Pistol, revolver, etc.	Carrying prohibited.		\$25 to \$200; 20 to 90 days.		
Illinois	Pistols, revolvers, etc.	Carrying prohibited*.	Peace officers.	Maximum: \$300; 1 year.		
Indiana	U. F. A.	Carrying prohibited, concealed or otherwise.	U. F. A.		\$1.00 per year.	Circuit, superior or criminal court.
Iowa	Pistols, revolvers, etc.	Carrying prohibited.		Maximum: \$500; 2 years.		Sheriff.
Kansas	Pistol.	Carrying prohibited.				
Kentucky	Deadly weapon.	Carrying prohibited.	Peace officers.	\$50 to \$100; 10 to 40 days.	None provided.	
Louisiana	Firearms with barrels less than 20 inches, except pistols or revolvers.	Carrying prohibited.	Peace officers.	\$10 to \$300; 10 days to 6 months.		
Maine	Firearms, etc.	Carrying prohibited.	Peace officers.		Yes.	Police departments.
Maryland	Pistol, etc.	Carrying prohibited except as a "reasonable precaution."	Peace officers.	Maximum: \$1,000; 2 years.	None provided.	
Massachusetts	Firearms with barrels less than 18 inches.	U. F. A.		6 months to 5 years.	50c per year.	Judge, police, chief, mayor, selectmen, etc.
Michigan	Firearms, 30 inches or less in length.	U. F. A.	U. F. A. and persons licensed by other states.	Maximum: \$2,500; 5 years.	Required (fingerprints).	Prosecuting attorney, chief of police, sheriff, county clerk.
Minnesota	Pistol, etc.	Carrying prohibited.	Persons with reasonable cause to fear injury.	6 months surety.	None provided.	
Mississippi	Pistols, etc.	Carrying prohibited.	Peace officers, travelers, persons apprehending attack.	\$25 to \$100; to 3 months.		
Missouri	Dangerous or deadly weapon.	Carrying of firearms in public places prohibited.	Peace officers, travelers.	\$100 to \$1,000; 50 days to 2 years.		
Montana	Pistols, revolvers, etc. in cities or towns.	Carrying prohibited.	Peace officers, etc.	Maximum: \$500; 5 years.	Annual.	Judge of district court.
Nebraska	Revolver, pistol, etc.	Carrying prohibited unless "justified."		Maximum: \$1,000; 2 years.	None provided.	
Nevada	U. F. A.	Carrying prohibited.	Peace officers, travelers on public conveyances.	\$20 to \$500; 30 days to 6 months.		Board of county commissioners.
New Hampshire	U. F. A.	Carrying prohibited.	U. F. A.	Maximum: \$100; 1 year.	Annual.	Mayor, selectmen, chief of police.
New Jersey	Length less than 26 inches.	U. F. A.	Peace officers, hunters, target shooters.	Misdemeanor.	Annual, \$1.00 (good for purchase).	Chief of police, sheriff; then supreme court, common pleas judge.

* "No person shall carry in a motor vehicle any firearm with the intent to use the same in the commission of any crime."

Digest of State Firearms Laws—Part II

This digest is necessarily incomplete and is intended only for quick reference. More complete information may be secured from any lawyer or law library or by writing to the proper state authorities. Members using this table are also cautioned to consult their local police officials for possible municipal ordinances at variance with the state act.

No attempt has been made to include in this table special regulations such as those regulating or prohibiting the use of machine guns, silencers, etc.

Uniform Fire- arms Act (See note above)	Not required		Eighteen	Drug addicts, ex- convicts, insane, drunkards	Required	Yes	Delivery 48 hours after purchase
STATE	LICENSE TO OWN OR BUY	SECURED FROM	MINIMUM AGE TO OWN	PERSONS BARRED	DEALER'S LICENSE	SALES REGISTRATION	OTHER SALES REGULATIONS
Alabama	No.		Eighteen	U. F. A.	50c per year	Yes	U. F. A.
Arizona	No.		Fourteen	Indians			
Arkansas	Sale prohibited						Sales of pistols and pistol ammunition prohibited. Delivery next day.
California	No.		Eighteen	Aliens, drug ad- dicts, felons.	Yes	Yes	
Colorado						Yes	No sales during riots.
Connecticut			Eighteen	Aliens	Required	Yes	Written applica- tion to purchase.
Delaware	No.		"Minors"	Intoxicated per- sons.	\$25 per year	Yes	
District of Columbia	No.		Eighteen	U. F. A.	Yes	Yes	
Florida	No.		Sixteen to buy; twenty-one to carry.	Persons of un- sound mind.	\$50.		
Georgia	No.		Eighteen		\$50 to \$100.		
Hawaii	Yes	Sheriff	Eighteen	Felons, anarchists.	Yes	Yes	
Idaho			Fifteen	Indians			
Illinois			Eighteen			Yes	
Indiana	No.		Eighteen	U. F. A.	\$5.00 per year	Yes	U. F. A.
Iowa			"Minors"		Yes	Yes	
Kansas			"Minor"				
Kentucky	No.		"Minors"	Convicts	\$100, pistols only		
Louisiana			Twenty-one	Aliens	\$35 to \$200.	Yes	
Maine			Sixteen			Yes	
Maryland			Twenty-one				
Massachusetts	Yes	Same as to carry	Fifteen	Unlicensed aliens, drug addicts.	Yes	Yes	
Michigan	Required	Chief of police, sheriff.	Nineteen	Drug addicts		Yes	No mail advertis- ing from out of state.
Minnesota	No.		Eighteen	Alien enemies			
Mississippi			"Minors"		\$100.	Yes	
Missouri	50c	County clerk	"Minors"			Yes	
Montana				Fourteen (to use alone).			
Nebraska							
Nevada			Fourteen (to use alone).	Aliens, felons			
New Hamp- shire	For aliens, felons	Mayor, selectmen, chief of police.	"Minors"	Unlicensed aliens, felons.	Required	Yes	
New Jersey	One for each pistol.	Judge, sheriff, chief of police, secretary of state.	Eighteen	Drug addicts, fel- ons, insane.	Annual	Required	Delivery 7 days after application

Early Hunting Experiences

By JAMES H. COOK

I CAME from a family of pioneers in southern Michigan, back in the early sixties. The men of the family were all expert with the rifle, axe, and scythe, and my opportunities for seeing good shooting with muzzle-loading rifles were most excellent; also for securing some experience in using one of them myself.

Forests of timber of several varieties then flourished on all sides about our home, and game of various kinds was very abundant, especially pigeons and squirrels. Vast flocks of pigeons would fairly darken the sky when flying between their feeding grounds and their "roosts" or nesting places. Black, gray, and fox squirrels, as well as their little kinfolds the small red and flying squirrels, were so numerous that squirrel and pigeon pot-pies were frequently enjoyed in our home.

One of our neighbors, Alden Brown by name, had a little shop in which he made muzzle-loading rifles. These were greatly prized by those fortunate enough to own them, for no others made in that region excelled them in workmanship or accuracy. Mr. Brown evidently did not desire to see how many rifles he could make and sell, but rather took the greatest pride in turning out nothing but masterpieces. He was quite old and very deaf at the time I knew him. Seeing my interest in his work, he took a liking to me and we became friends. He was very fond of hunting, and of spearing fish at night with a jack-light set on the bow of his canoe; and he sometimes took me with him on short trips after wild turkeys or squirrels. He was a good shot for one of his age, but his eyesight was failing; a fact which disturbed him greatly, especially when he wished to test and sight a new rifle.

Mr. Brown instructed me always to pull the trigger by gentle pressure, and never to jerk it. He noticed that I kept both eyes open in aiming,—a peculiarity of mine which has stuck to me. He must have been pleased at the results I obtained in targeting one of his rifles for him, for he allowed me to shoot some squirrels with it. This I could do successfully only when I could obtain a rest for the muzzle of the rifle, as I was not strong enough at that time to shoot off-hand very well with a long, heavy gun. A squirrel-hunter never shot at any part of his game except the head, in order not to spoil the meat for eating.

My next experience in the use of a rifle came in hunting grounds far removed

from the state of Michigan, for shortly after my early boyhood days we moved to the southwestern part of Texas. Here I found employment with a Mr. B. Slaughter and his sons, as a cow hand. Plenty of good hunting could then be had in the frontier portions of Texas, where everything and everybody had the appearance of being untamed. Everybody and their "folks" went armed at all times, and cattle and horses, as well as game of many sorts, were as wild as nature ever made an Apache Indian or a buffalo.

I purchased a long-barrelled, heavy muzzle-loading rifle made by S. Hawken, in St. Louis, but soon found that it was not a handy saddle gun; and furthermore, a good grade of rifle powder was not easily secured in the land I ranged over. So I disposed of this rifle, and acquired a breech-loading Spencer rifle. This proved to be a real "hum dinger" in actual fact, for I could often hear the bullet as it whirled through the air end over end in the general direction of the target. A large-caliber heavy bullet combined with a light charge of very low-grade powder in the cartridge made for that rifle, caused me to condemn it very quickly.

Occasionally I could kill a turkey on roost or a cottontail rabbit with my Remington or Colt muzzle-loading revolvers. The Henry rifle made its appearance at about that time, and I obtained one of them. It proved to be the best rifle ever introduced into the brushlands of southwest Texas up to that time. It could be carried in a scabbard on a saddle, and up to the limit of its range it was very accurate. Its range was limited, as only a small amount of powder was used in the cartridge made for it, but the rapidity with which it could be fired was such as had never been heard of before in the Lone Star state. Later on the Henry rifle was replaced by the Winchester .44-caliber rifle and carbine, which soon proved to be an improvement over the Henry. The cartridges were also a great improvement.

In those old cow camps out on the Neuces and Frio rivers back in the early seventies, there was good reason for having firearms handy at all times. Bands of Comanche and Apache Indians roamed about hunting for white men's saddle horses, and ambushing any cow hands or travelers they ran across. I was but a cow hand, whose work consisted in helping to capture wild cattle in the thickets of mesquite, catclaw, cactus, and chap-

aral, but occasionally I had an opportunity to hunt Indians or game, and quite a large proportion of my wages went for ammunition. There was no market for the game I killed, but the spirit of the hunter which I inherited must have urged me to hunt for wild beasts and men, and I derived great pleasure from getting anything I went for.

I took part in driving the great herds of longhorn cattle from southern Texas to the markets and ranges of the North. In so doing we crossed the last great buffalo range of the plains country, where the wild and woolly beasts were still plentiful. I killed a few of them with my Winchester carbine when a change of meat was wanted, by getting a close run in on them with a fleet cow-horse.

Becoming tired of working day and night with the wild cattle of Texas, I decided to become a big-game hunter for the markets of the North. I joined two well-known hunters, and we worked in Colorado and Wyoming from 1877 to 1882. We hunted for the meat and hides of the big game, which was at that time abundant on the plains and in the mountains, and we trapped in season for the fur-bearing animals. We did not become wealthy, but we had the best of health and enjoyed the life we lived. Each used a different rifle. One, Charles Alexander, used a heavy .45 or .50-caliber Remington; another, Selden Martin, used a .45-caliber Sharps, while I used a .40-90 Sharps. All those rifles were good. They were highly accurate, and I cannot recall that one of them needed repairing during the time I hunted with those other men.

Our secret for successful hunting was to see game before it saw us; then get just as close to it as possible, and hit it in a spot that would kill it quickly. We did as little shooting as possible, and did not ruin meat by shattering bones and flesh with bullets.

We found a ready sale for all the elk, deer, mountain sheep, and antelope meat we could secure, as we took pains to dress it nicely and keep it clean. Some of it we jerked when hunting in hot weather. There were no game laws then, but we did not intentionally kill does at the wrong season of the year. During the years in which we hunted we killed a number of bears, but there was little demand for such meat. None of us ever had a fight with a bear. All bear I have come across seemed to know that a man carrying a gun had the advantage.

When hunting big game I always reloaded my cartridges. I purchased the

bullets for my Sharps .40-90, and also the paper patches for them, as the factory could turn out better bullets and patches than I could. My reason for choosing the Sharps .40-90 for hunting was that the velocity of the bullet was much greater than in the case of the larger-bore rifles, and the trajectory much lower. I have often fired one of the old "Long Tom" Springfield army guns, and have targeted a few of them at the Ordnance Depot at Camp Carlin, Wyoming; but I found that while they were good rifles for military purposes in their day, the velocity of the bullet was so low that an enemy fired at from a distance of 500 or 600 yards, seeing a puff of smoke rise from the rifle, would have time to get several yards away from the spot he had occupied when fired at, before the bullet arrived. At that distance a bullet fired from a .40-90 Sharps would give very little time for the other person to do any dodging or running.

To us as market hunters, such incidents as killing a deer, elk, or mountain sheep with unusually large horns, or a very large silver-tip grizzly bear, were of little moment. Naturally we were much pleased when we made an extra-good shot at long range, or at some running animal. We always carried rest sticks, and used them whenever possible. The making of a good offhand shot after a hard climb, crawl, or run, is a feat seldom accomplished, and would be considered a "fluke" by old hunters.

We had a first-class outfit in the way of tentage, and saddle and pack horses and driving horses. Also we had a sheet-iron camp stove to cook on and warm our tent when the weather was bad; but in good weather we did our cooking in the open, using the old-style dutch oven and camp kettles, and broiling much of our meat over a good bed of coals. Hunting to us meant no pleasure outing or play spell. Constant work during all daylight hours was required. The horses had to be cared for, and hides stretched, fleshed, and baled after being dried. Meat and furs had to be well cared for. Reloading cartridges and cooking meals took up a portion of our time. Our only light at night was that of the moon, our campfire, a coal-oil lantern, or candles. We did our own laundry work and mending, and moved our camp quite frequently, this latter being the simplest method of house cleaning, as well as taking us to hunting grounds where the game was undisturbed.

One day our camp was located on Crow Creek in Colorado, about twenty miles east of the town of Greeley. A spring round-up of cattle was just getting under way, and the cattlemen made camp close to us. Just at the noon hour a few buzzards came soaring overhead. They

were as far up as I have ever seen any birds fly. Saul Sutton, the foreman in charge of the cattle outfit, called over to me to "shoot one of those birds." Acting upon impulse, but knowing full well that the chance of my hitting one of those buzzards was less than one in a trillion, I picked up my rifle and fired at one of them directly overhead, and tore his head into bits. That buzzard falling from such a height was a sight to be remembered by all who witnessed it. A yell burst out from everybody in camp as the bird hit the ground, a short distance from where I stood. Some of its feathers were carried away as souvenirs. No one knew better than I that such a shot could not be duplicated in a thousand years.

RUNNING TURKEY SHOTS

(Continued from page 15)

the turkeys more. If a tyro can win one turkey, though it may cost him more than it would to buy the bird outright, he has had some fun for his money and he will be back at the next shoot; also his better half is not nearly as apt to ask questions about costs when the meat is there for the Thanksgiving dinner! So we began making up rounds for shooters who had not won a bird. After winning one turkey they had to shoot against the other winners if they wished more birds. This gave everyone a chance to win one turkey with an even break, and it gave the "hard-boils" a chance to compete against each other until dark. These "hard-boils" really prefer to shoot against each other rather than to take turkeys away from new shooters who really have no chance to win. The old-timers that always showed up at turkey matches were there perhaps to beat their best friends and get the laugh on them, or to renew acquaintanceships and see who had the best rifle and sights, together with the knowledge of how to use them.

At some matches an effort has been made to limit winners by setting them back, say ten yards each time they win a bird. However, except for more wind at the greater distances, this is not entirely a handicap. A shot that cuts the tack-hole at 60 yards would still be on it at 100 yards, so the shooter that has an outfit that helps him to cut the tack-hole or cross regularly once in about every so many shots will make about as many winning shots when placed back as far as 100 yards, though his group of shots may be proportionately larger. He would need to resight for the longer distance, but could keep winning if a stayer.

Help

As our shoots were always held on a small margin of profit, we had to keep the

overhead down as much as possible. In shooting pools two of us could shoot off 50 or 60 turkeys in a day if the crowd was large enough, and eager to shoot. The marker would hang up and take down the targets, mark and disc the shots; and hand out the turkeys to the winners, the birds being parked conveniently near the target. The other man made up the rounds, took the money, called the shooters for their turns in the round, and spotted the shots with the scope and called them aloud. If the shooting got really fast, however, we would get a third man to make up the rounds part of the time. If the shooting master has a good line of ballyhoo to string out all the time, it keeps the crowd interested.

Our rules were simple, but we put them up to be read and observed. They were:

1. Safety First.
2. Pay as you go.
3. Shoot for yourself.
4. Ties decided by string measure, target center to bullet-hole center. Still tied, shoot off.
5. No limit, but some rounds limited to non-winners.

Before we adopted the one-turkey-and-shoot-for-yourself rules, many that had never shot a rifle would stake a known good shot to win a turkey for them. This good shot might fire two or more times in a round, and invariably one of his bullet holes would take the turkey. That quickly put a damper on the match, as it looked as if this shooter were winning all the birds; the average shooters soon refusing to compete against him. With our one-bird limit cutting the extra good shot out of the easy rounds, we got more new shooters to take a lesson in rifle competition and win a turkey themselves.

GRAPHIC CHARTS FOR SMALL-ARM BALLISTIC COMPUTATIONS

(Continued from page 10)

on the coefficient of form scale. The value at which it then cuts the ballistic coefficient scale is the answer. Projectiles having the same shape have the same coefficient of form, regardless of size.

To aid in estimating coefficient of form, the scale is also marked for ogival radius in calibers. This can be used for the ogival-point bullets mentioned above. To determine the radius of ogive in calibers, divide the measured radius in inches by the caliber. Note that the greater the ogival radius (and hence the longer the point), the smaller the coefficient of form and the larger the ballistic coefficient. From this we see that longer-pointed projectiles have greater carrying power, other things being equal.

Sectional density is sometimes called the uncorrected ballistic coefficient. It is

the ballistic coefficient of projectiles whose coefficient of form is unity; that is, having the same shape as the projectile taken as standard at the time of the historic firings by Krupp at Meppen in 1881. Sectional density is of interest to us only as a step in computing the final ballistic coefficient.

Sources

For those interested in the sources used in developing these charts, and the assumptions involved, the following remarks are appended:

Plate I is a nomographic representation of the well-known formula for kinetic energy: $E = \frac{1}{2} MV^2$.

Plate II is based upon Table I of Colonel Ingalls' Ballistic Tables, published by the War Department, but extended by the writer to 4000 f.-s. The co-ordinates are laid out so that velocity plotted against range comes out a straight line, the slope of the line being inversely proportional to the ballistic coefficient. The only assumption involved is that the tangential velocity of the bullet is considered to be the same as its horizontal component. In view of the small angles of inclination over small-arm ranges, this assumption is entirely justifiable.

Plate III computes time of flight by dividing the range by the average velocity of the bullet over the range. It computes the mid-range height of trajectory by assuming it to be one-fourth the vertical fall of a bullet fired horizontally for the same time of flight. The angle of departure is computed as the vertical fall divided by the range.

Plate IV computes ballistic coefficient according to the formula: $C = \frac{w}{d^2}$, where

w is the weight, d is the caliber, and i is the coefficient of form of the bullet.

The term $\frac{w}{d^2}$ is the sectional density. Data for ogival radii corresponding to coeffi-

cients of form are taken from Table VI of Colonel Ingalls' Ballistic Tables.

All conversion constants between the various units used are taken care of by the scales employed.

MY SHOOTING DAYS

(Continued from page 13)

that every shot had to hit—perfection.

This I never attained, but now and then I came so close to it that my most cherished memories are of those occasional shots which seem impossible,—which are impossible, yet which you find that you have made.

If there were to be had today (there are not) other guns like my old 6-bore, I doubt if very many shooters could ever learn to use them proficiently, for no shooter today has the opportunity that I had to use the gun on wildfowl. The wildfowl are not here. Consider the opportunities I had that are denied today's sportsmen. Wildfowl existed by the million. Usually I spent a whole month out of each year doing nothing but shooting them. In a single average day I would shoot from one to two hundred times at ducks at all ranges, under all conditions. Figure that up, and then add the week-end hunts of from three to four days every week in season, and you will see that we had in one month more opportunity to learn how to shoot than comes to most hunters in a full lifetime.

(To be concluded.)

THE ONE I MISSED

(Continued from page 9)

divers cartridge catalogs, I decided that the .44 S. & W. American was the proper fodder. I couldn't buy any in town, but made a trip and came back with three boxes, one of black and two of smokeless-powder ammunition.

The .44 S. & W. American isn't such a hot cartridge. The bullet hasn't the stability of the .44 Russian, and it has outside lubrication; but you ought to see that baby shoot! With its 8-inch barrel it doesn't jump the way the shorter ones do, and if you're careful about your trigger-squeeze, it pops the bullets into the target about where you hold it, up to 50 yards.

The ammunition is rather scarce, but I found a reloading tool for it, and I am saving my used cases; and when I run out of factory stuff I'll get Belding & Mull to turn me out a mould. Then I'll be sitting pretty for five or ten years, at least.

I'll have to wind up by making a confession: Some of you fellows may remember my "Hand Gun History" that came out in the RIFLEMAN in 1923. Well, at that time I tried to cover all the models that Smith & Wesson had put out,—but I sure missed this one!

EXPERIENCES WITH THE .22-3000 LOVELL

(Continued from page 8)

I have not said that the .22-3000 is perfect, for it is not. With the 45-grain load it is not fit to use on either a turkey or a goose at ranges under 150 yards, as it is too destructive to flesh. However, this can be overcome, I am sure, by using proper 55-grain bullets. In addition, it is reasonably but not absolutely free from ricochets. Its velocity is considerably higher than that of the Hornet, and for this reason it is less liable to ricochet. So in shooting it, pay due attention to your background. Barring these faults, it is surely the ideal cartridge for the kind of shooting herein considered, and more than deserves to be adopted as standard by the factories, and to have proper rifles put out to handle it.

Camp Perry Bulletins

(Concluded from October Issue)

Official Bulletin No. 21

WINCHESTER TROPHY MATCH

(304 Entries—132 Class "A", 172 Class "B" Entries)

When fired—Wednesday, September 2, 1936.

Course—20 shots at 200 yards, prone. .22 Cal. Rifle.

Prizes—To the winner, the Trophy and a gold medal; second, a silver medal; third to tenth, bronze medal. Cash prizes. (Schedule "I")

No.	Name and Address	Score
* 1.	Goldsbrough, A. F., Los Angeles, Calif.	200
* 2.	Scarborough, W. D., Akron, Ohio	199
* 3.	Davis, James L., Wilkinson, Pa.	199
* 4.	Crockett, O. E., Logansport, Ind.	199
* 5.	Hession, John W., New Haven, Conn.	198
* 6.	Swanson, Emmet O., West Allis, Wis.	197
* 7.	Bulgrin, Lew, Racine, Wis.	197
* 8.	Potter, Harry E., Downing, Mo.	197
* 9.	Woodring, William B., Alton, Ill.	197
* 10.	Vitrano, John, Brooklyn, N. Y.	197

Official Bulletin No. 52

REMINGTON TROPHY TEAM MATCH—SMALL BORE

(9 Entries—3 Class "B", 6 Class "A" Entries)

When fired—Sunday, September 6, 1936.

Course—20 shots per man at 200 yards, prone.

Arm—Small bore, any sights.

Prizes—To the winning team, the Trophy and six silver medals. Second and third teams, bronze medals. Cash prizes.

No.	Team	Score Total
1.	EAST ALTON RIFLE CLUB	
	Mercier, Earl	189
	Brown, Edwards	194
	Tiefenbrunn, V. G.	187
	Woodring, W. S.	198
2.	FENMORE RIFLE CLUB	768
	Schweitzer, W. P.	194
	Lippencott, J. C.	195

No.	Team	Score Total
	Kaiser, M.	184
	Samsoe, T.	192
* 3.	QUINNIPIAC R. & R. CLUB	765
	Doyle, E. J.	188
	Carlson, Dave	190
	Hession, J. W.	192
	Hellwig, E.	192
4.	BLACK HAWK RIFLE CLUB No. 2	758
* 5.	ROSLYN R. & R. CLUB	757

Official Bulletin No. 54

H. M. POPE APPRECIATION MATCH—SMALL BORE

(79 Entries—38 Class "A", 41 Class "B" Entries)

When fired—Friday, September 4, 1936.

Course—40 shots at 50 meters, standing. (N. R. A. standing position.)

THE AMERICAN RIFLEMAN

Arm—22 caliber and any sights.
 Prizes—To the winner, a gold medal; second, a silver medal; third to fifth, bronze medals. Cash prizes.

No.	Name and Address	Score
1.	Blensinger, Arthur, Rochester, N. Y.	341
2.	Israelson, Merle, Akron, Ohio	330
3.	Dinwiddie, Marcus, Detroit, Michigan	329
4.	Tokar, James M., Detroit, Michigan	329
5.	Lippencott, J. C., Elizabeth, N. J.	328
6.	Nooney, Frank, Spokane, Wash.	328
7.	Campbell, John, Akron, Ohio	325
8.	Kaiser, Maurice, Ft. Wadsworth, N. Y.	320
9.	Pierson, M., Ann Arbor, Mich.	319
10.	Goldsborough, A. F., Los Angeles, Calif.	318
11.	Nordhus, Conrad, Highland Park, Ill.	317
12.	Nelson, R. L., Sgt., Clear Field, Pa.	315
13.	Swanson, E. O., Minneapolis, Minn.	314
14.	Burnham, Wallace, Spokane, Wash.	314
15.	Johnson, Eric, Hamden, Conn.	312
16.	Ritter, Emil, Portland, Ore.	310
17.	Davis, R. Jr., Washington, D. C.	310

Official Bulletin No. 55

50 METER INTERCLUB TEAM MATCH—SMALL BORE

(9 Entries—7 Class "A", 2 Class "B" Entries)

When fired—Sunday, September 6, 1936.
 Course—20 shots per man at 50 meters, prone.
 Arm—22 Caliber Rifle, Metallic Sights.
 Prizes—To the winning team, silver medals; second and third, bronze medals. Cash prizes.

No.	Team	Score	Total
1.	FENMORE RIFLE CLUB		
	Schweitzer, William	197	
	Lippencott, J. C.	199	
	Samsoe, Thirkild	198	
	Kaiser, Maurice	197	
	Total		791
2.	EAST ALTON RIFLE CLUB		
	Franz, A. O.	197	
	Brown, Edwards	197	
	Mercier, Earl	197	
	Woodring, William	195	
	Total		786
*3.	PALMA RIFLE CLUB		
	Gajeway, C. R.	196	
	Polk, C. J.	196	
	Polk, Jack	199	
	Polk, John L.	194	
	Total		785
4.	BLACK HAWK RIFLE TEAM No. 2		784
5.	SUNSHINE RIFLE AND REVOLVER CLUB		781
*6.	VALLEY STREAM RIFLE CLUB		779

Official Bulletin No. 58

SHORT RANGE INTERCLUB TEAM MATCH—SMALL BORE

(17 Entries—12 Class "A", 5 Class "B" Entries)

When fired—Saturday, September 5, 1936.
 Course—20 shots per man at 50 yards, prone, and 20 shots per man at 100 yards, prone.
 Arm—22 Caliber Rifle, Any Sights.
 Prizes—To the winning team, six silver medals; second and third teams, bronze medals. Cash prizes.

No.	Team	Score	Total
1.	FENMORE RIFLE CLUB		
	Kaiser, Maurice	399	
	Samsoe, Thirkild	398	
	Lippencott, J. C.	398	
	Schweitzer, William	400	
	Total		1595
2.	EAST ALTON RIFLE CLUB		
	Conrad, Charles	397	
	Brown, Edwards	399	
	Franz, A. O.	399	
	Woodring, W. B.	399	
	Total		1594
3.	BLACK HAWK RIFLE CLUB NO. 1		
	Wiles, Russell, Sr.	394	
	Wiles, Russell, Jr.	395	
	Trowbridge, Don	400	
	Wiles, Bradford	399	
	Total		1588
4.	ZEPPPELIN RIFLE CLUB No. 2		1585
5.	ZEPPPELIN RIFLE CLUB No. 1		1585
*6.	VALLEY STREAM RIFLE CLUB		1583
*7.	BLACK HAWK RIFLE CLUB No. 2		1582

Official Bulletin No. 72

NATIONAL PISTOL TEAM MATCH

(48 Entries)

When fired—Thursday, September 10, 1936.
 Course—First stage, slow fire. 50 yards—Standard American 50-yard target, two scores (five shots each); one minute per shot. Second stage, timed fire, 25 yards—Standard American 50-yard target with only the nine and ten rings blacked, known as the "25-yard rapid-fire pistol target," two scores (five shots each); 20 seconds per score. Third stage, rapid fire,

25 yards—Standard American 50-yard target with only the nine and ten rings blacked, known as the "25-yard rapid-fire pistol target," two scores (five shots each); 10 seconds per score.

Arm—Pistol, U. S. caliber .45 M1911 or M1911A1, specially selected and having not less than 4-pound trigger pull, as issued by Ordnance Property Officer National Matches, or the same type and caliber of pistol, as manufactured by Colt Patent Fire Arms Company, privately owned, which may be equipped with front and rear sights similar in design to the issue sight, though different in dimensions.

Prizes—The "gold cup" trophy shall be awarded to the winning team to be held until the next national matches, and to each member of the highest one-third of the teams shooting shall be awarded a medal. A miniature of the above-named trophy shall also be awarded to the team winning the original trophy, this miniature trophy to be the permanent property of the winning team.

1. LOS ANGELES POLICE

(Gold cup and medals)

Starkey, B. L. (Captain)

Engbrecht, J. J. (Coach)

Name	50 Yds.	25 Yds.	25 Yds.	Total
S.F.	T.F.	R.F.		
Engbrecht, J. J.	78	95	86	259
Starkey, B. L.	74	91	88	253
Starkey, B. L.	70	92	80	242
Jones, E. E.	82	93	85	260
Wheeler, M. E.	78	88	84	250
Total				1264

2. UNITED STATES MARINE CORPS

(Medals)

Edson, M. A., Major (Captain)

Lloyd, C. A. (Coach)

Name	50 Yds.	25 Yds.	25 Yds.	Total
S.F.	T.F.	R.F.		
Lienhard, J. Maj. U.S.M.C.	73	92	89	254
Whaling, W. J., Capt. U.S.M.C.	73	98	91	262
Bailey, H. M. M.G.V. Sgt. U.S.M.C.	64	95	90	249
Clements, B. E., Sgt. U.S.M.C.	69	88	75	232
Moore, A. N., Corp., U.S.M.C.	82	93	89	264
Total				1261

Alternate

Heath, J. E.

3. CALIFORNIA STATE CIVILIAN #1

(Medals)

Semmelmeier, H. W. (Captain)

Ward, C. E. (Coach)

Name	50 Yds.	25 Yds.	25 Yds.	Total
S.F.	T.F.	R.F.		
Ward, C. E.	70	86	91	247
Adams, H. J.	82	94	83	259
Dircks, J. O.	78	88	90	256
Vallance, M. L.	86	87	80	253
Young, L. J.	75	89	82	246
Total				1261

Alternate

Semmelmeier, H. W.

4. U. S. COAST GUARD PISTOL TEAM

(Medals)

Morine, Leon H., Lt. (Captain)

Mitchell, Wilfred, Gunner (Coach)

Name	50 Yds.	25 Yds.	25 Yds.	Total
S.F.	T.F.	R.F.		
Wilson, Melvon O. BM 1C	80	91	83	254
Goulden, Paul, CBM	77	91	89	257
Williams, Harold J., RM 3C	78	89	87	254
Alligood, James O., CBM	68	93	81	242
Jones, Earl C., BM 1C	77	90	86	253
Total				1260

Alternate

Bakutis, Walter S., Ensign.

5. U. S. CAVALRY PISTOL TEAM

(Medals)

Heavey, Thomas J., Major (Captain)

Rehm, George A., Captain (Coach)

Name	50 Yds.	25 Yds.	25 Yds.	Total
S.F.	T.F.	R.F.		
Jensen, Jens B., Sgt.	71	91	83	245
Burcham, Clyde A., Capt.	79	92	86	257
Grider, Rosco R., Sgt.	81	91	81	253
Fitzgerald, Wade E., 1st Sgt.	68	90	64	222
Rehm, George A., Capt.	86	99	90	275
Total				1252

Alternate

Milton, Oliver D., Sgt.

6. DETROIT POLICE TEAM

(Medals)

Driver, Marvin, Sgt. (Captain)

Name	50 Yds.	25 Yds.	25 Yds.	Total
S.F.	T.F.	R.F.		
Shapiro, Albert	72	89	85	246
Hemming, Alfred	85	86	80	251
La Londe, Maurice	73	96	86	255
Pradel, Lloyd	69	92	78	239
Sanderson, Lewis	70	90	81	241
Total				1232

Alternate

Bodnar, Andrew.

7. INFANTRY TEAM

(Medals)

O'Mohundro, Wiley H., Maj. 28th Inf. (Captain)

Hedden, W. A., Maj. 66th Inf. (Coach)

Name	50 Yds.	25 Yds.	25 Yds.	Total
S.F.	T.F.	R.F.		
Hinds, Sidney R.	79	88	87	254
Capt. 7th Inf.				
Tomey, William R.	71	93	90	254
Capt. Hq. 1st Div.				
White, William W.	61	86	81	228
38th Inf. Corp.				
Marsh, James H.	78	93	86	259
Capt. 18th Inf.				
Tumlin, James A.	62	91	81	234
Cpl. 29th Inf.				
Total				1229

Alternate

Allen, Thomas H., Capt. 66th Inf.

8. U. S. IMMIGRATION BORDER PATROL

TM. NO. 1

(Medals)

Reiman, Arthur J. (Captain)

Name	50 Yds.	25 Yds.	25 Yds.	Total
S.F.	T.F.	R.F.		
Askins, Charles	67	93	87	247
Knesek, L. D.	86	95	83	264
Box, M. T.	79	86	76	241
Tenney, A. M.	69	85	85	239
Lennon, Harry E.	73	88	75	236
Total				1227

Alternate

Redmond, Edwin M.

9. D. & H. R. R. POLICE

(Medals)

Thiessen, F. A., Maj. (Captain)

Overbaugh, J. H. (Coach)

Name	50 Yds.	25 Yds.	25 Yds.	Total
S.F.	T.F.	R.F.		
Hess, A. I.	74	84	92	250
Adrianse, R. L.	64	94	81	239
Ross, H. J.	48	90	79	217
Herron, J. R.	68	92	89	249
Overbaugh, J. H.	73	98	86	257
Total				1212

Alternate

Thiessen, F. A., Maj.

10. CALIFORNIA STATE CIVILIAN NO. 3

(Medals)

Guerdatt, J. C. (Captain), Police Dept. L. A.

Slavens, S. A., Police Dept. L. A. (Coach)

Name	50 Yds.	25 Yds.	25 Yds.	Total
S.F.	T.F.	R.F.		
Johnson, I. L.	79	92	79	250
Strand, A. M.	74	76	68	218
Johnson, W. P.	75	90	74	239
Todd, J. C.	65	85	87	237
Slavens, S. A.	70	93	92	255
Total				1199

Alternate

Guerdatt, J. C.

11. SHERIFF'S PISTOL TEAM

(Medals)

Hotz, W. M. Col., Sher. Dept. L. A. Calif (Captain)

Card, H. W., Sher. Dept. Inglewood, Calif. (Coach)

Name	50 Yds.	25 Yds.	25 Yds.	Total
S.F.	T.F.	R.F.		
Pealer, C. E.	59	74	84	217
Fleming, E. Tom	65	83	77	225
Griggers, S. F.	54	90	90	234
Salazar, C. J.	81	92	77	250
Shivell, A.	78	94	90	262
Total				1188

12. SAN DIEGO POLICE

(Medals)

Pease, R. S. (Captain)

Name	50 Yds. S.F.	25 Yds. T.F.	25 Yds. R.F.	Total
Oliver, J. R.	70	93	84	247
Freed, C. B.	61	87	80	228
Cohn, Irving	73	78	82	233
Pease, R. S.	72	83	83	238
Beckett, R. B.	71	85	81	237
Total				1183

Alternate
Beckett, R. B.

13. WASHINGTON NATIONAL GUARD

(Medals)

Kenney, Irven W., Lt. Col. Ord. (Captain)

Stoddard, Lloyd V., Mr. Sgt. (Coach)

Name	50 Yds. S.F.	25 Yds. T.F.	25 Yds. R.F.	Total
Harrison, Fred L., Capt. 161st Inf.	83	77	79	239
Kuehn, Riley, Capt. C.W.S. Hq. 41st Div.	65	88	69	222
Stoddard, Lloyd V., Mr. Sgt., Hq. 248th C.A.	Did not fire			
Johnson, Jack W., Sgt. 161st Inf.	76	84	84	244
Gottman, Henry, Sgt. 161st Inf.	81	79	79	239
Dever, Ralph E., 2nd Lt., 148th C.A.	72	82	76	230
Total				1174

Alternate
Dever, Ralph E., 2nd Lt.

14. U. S. IMMIGRATION BORDER PATROL

NO. 2

(Medals)

Sevy, Melvin O. (Captain), Detroit, Mich.

Name	50 Yds. S.F.	25 Yds. T.F.	25 Yds. R.F.	Total
Courtney, C. C.	59	81	83	223
Kay, A. M.	78	89	65	232
Jackson, Robert P.	72	90	76	238
Davis, William J.	64	89	87	240
Sparks, Robert L.	71	93	73	237
Total				1170

Alternate
Adams, K. S.

15. CALIFORNIA STATE CIVILIAN NO. 2

(Medals)

Bartley, J. A. (Captain)

Name	50 Yds. S.F.	25 Yds. T.F.	25 Yds. R.F.	Total
Donlan, J. P.	66	94	64	224
Semmelmeier, Marion	66	87	75	228
Buchanan, J. D.	74	85	76	235
Goerler, R. P.	65	97	82	244
Bartley, J. A.	81	84	72	237
Total				1168

16. CALIFORNIA HIGHWAY PATROL

(Medals)

Galven, LeRoy F. (Captain and Alternate)

Name	50 Yds. S.F.	25 Yds. T.F.	25 Yds. R.F.	Total
Ford, L. W.	66	85	87	238
Galbraith, R. H.	71	86	80	237
Jacobs, H. R.	68	84	88	240
Reed, C. W.	53	84	74	211
White, E. L.	74	91	75	240
Total				1166

17. WASHINGTON STATE CIVILIAN NO. 1

Jellison, Roy W. (Captain)

Cowan, Lieut. (Coach)

Name	50 Yds. S.F.	25 Yds. T.F.	25 Yds. R.F.	Total
Anderson, Arnvid	65	87	81	233
Burnham, Wallie W.	70	87	89	246
Meister, Roy E.	65	84	90	239
Warshall, William	63	82	86	231
Day, W. F.	60	85	69	214
Total				1163

Alternate
Laybourn, Wallace M.

18. MICHIGAN NATIONAL GUARD

Boerem, Richard D., 1st Lt. (Captain)

Foster, Payson D., Lt. Col. (Coach)

Name	50 Yds. S.F.	25 Yds. T.F.	25 Yds. R.F.	Total
Boerem, Richard D., 1st Lt., 125 Inf.	67	78	88	233
Franklin, Ralph, 1st Lt., 182 F.A.	73	84	86	243
Franke, Walter, Plc., 106 Cav.	67	80	69	216
Layle, Theodore W., Sgt., 125 Inf.	68	85	84	237
Schultz, Gaylord S., Sgt., 125 Inf.	75	70	81	226
Total				1155

19. NATIONAL AMERICAN LEGION

Corbin, Clair M. (Captain)

Nordhus, Conrad E. (Coach)

Name	50 Yds. S.F.	25 Yds. T.F.	25 Yds. R.F.	Total
Van de Bogart, Paul	62	91	78	231
Nowka, Rant J.	76	89	88	253
Simmermacher, E. R.	70	91	83	244
Perry, George O.	54	63	66	183
Wilson, Lloyd E.	72	90	80	242
Total				1153

20. U. S. ARMY ORGANIZED RESERVES NO. 2

Moore, E. C., Capt. (Captain)

Harris, H. A., Capt. (Coach)

Name	50 Yds. S.F.	25 Yds. T.F.	25 Yds. R.F.	Total
Hicker	76	80	82	238
Harris, H. A., Capt. Ord. Res.	75	84	81	240
Kaufman, 2d Lt., 316 Inf., 79 Div.	71	82	84	237
Mardiros, A. N., 1st Lt. Inf. Res.	58	47	89	194
Townsend, T. G., Capt. Eng. Res.	79	75	85	239
Total				1148

Alternate
Springer, 1st Lt.

21. NEW YORK CITY POLICE

Schuber, Adolf P. (Captain)

Bernd, P., Lt., U.S.A. (Coach)

Name	50 Yds. S.F.	25 Yds. T.F.	25 Yds. R.F.	Total
Butler, Jos.	66	86	68	220
Fegan, Arthur	67	92	82	241
Koehler, Herbert	71	85	61	217
Schubert, Arthur	62	85	74	221
Schuber, Adolf P.	70	91	84	245
Total				1144

Alternate
Rowe, Earl.

22. U. S. ENGINEER PISTOL TEAM

Andrews, James D., Jr., Maj. (Captain)

Shorak, George N., Tech. Sgt. (Coach)

Name	50 Yds. S.F.	25 Yds. T.F.	25 Yds. R.F.	Total
Berish, John J., Sgt., 1st Eng.	74	87	74	235
Farler, Fred S.	56	89	77	222
McDonough, Robert K., Capt., 5th Eng.	80	77	75	232
Merrick, Bernard V., Mr. Sgt., Engr. (Sch. Det.)	60	83	78	221
Slater, Herbert T., Corp., 2nd Eng.	70	80	81	231
Total				1141

Alternate
Guy, Thomas, 1st. Lt.

23. CONNECTICUT CIVILIAN

Anthony, Harry F. (Captain)

Reising, E. G. (Coach)

Name	50 Yds. S.F.	25 Yds. T.F.	25 Yds. R.F.	Total
Jacobsen, George	69	89	88	246
Reising, E. G.	68	93	88	249
Yetter, John	64	84	74	222
Page, Gordon	54	79	76	209
Dwite, Conrad	65	77	70	212
Total				1138

Alternate
Lauritsen, A. P.

24. U. S. ARMY ORGANIZED RESERVE NO. 1

Townsend, Thomas G., Capt. (Captain)

Colston, Charles W., Capt. (Coach)

Name	50 Yds. S.F.	25 Yds. T.F.	25 Yds. R.F.	Total
Gau, H. L., 2nd Lt., Ord. Res.	82	90	81	253
Parker, G. W., 2nd Lt., M. I. Res.	69	82	79	230
Colston, C. W., Capt., 391 Inf.	57	86	61	204
Davidson, Capt., 316 Inf.	57	85	74	216
Shaffer, X. B., Capt., Vet. Res.	64	87	79	230
Total				1133

25. ILLINOIS CIVILIAN

Worthington, Morrison (Captain)

Johnson, Fred X. (Coach)

Name	50 Yds. S.F.	25 Yds. T.F.	25 Yds. R.F.	Total
Anderson, Ida B.	66	74	71	211
Anderson, Leroy H.	64	77	69	210
Cochrane, John C.	82	88	83	253
Engle, Harry O.	68	84	83	235
Smith, Kenneth N.	70	82	69	221
Total				1130

Alternate
Warnes, Everett F.

26. DISTRICT OF COLUMBIA CIVILIAN

Frye, Ervin A. (Captain)

Name	50 Yds. S.F.	25 Yds. T.F.	25 Yds. R.F.	Total
Frye, Ervin A.	59	89	74	222
Harris, Everett W.	76	81	71	228
Scott, Roger W.	74	91	91	256
Nicholson, William G.	70	86	79	235
Ross, Eugene A.	45	73	65	183
Total				1124

Alternate
Ness, Fred.

27. NEW YORK NATIONAL GUARD

Suavet, Henry E., Lt. Col. (Captain)

Mason, Charles, Sgt. (Coach)

Name	50 Yds. S.F.	25 Yds. T.F.	25 Yds. R.F.	Total
Evans, Burr A.	64	85	91	240
Sgt., 102 Eng.				
Manin, Harry A.	59	74	73	206
2nd Lt., 102 Eng.				
Morrissey, John B., Pvt., 107th Inf.	70	81	81	232
Bradt, David C., Cpl., 105th Inf.	64	80	77	221
Agramonte, Pedro H., Plc., 107th Inf.	84	81	59	224
Total				1123

Alternate
Perkins, Chester, Sgt.

28. CALIFORNIA NATIONAL GUARD

Hardy, David P., Lt. Col. (Captain)

Roberts, Paul J., Capt. (Coach)

Name	50 Yds. S.F.	25 Yds. T.F.	25 Yds. R.F.	Total
Marelich, Marion, Sgt., 250th C.A.	71	86	81	238
Carroll, William R., Sgt., 160th Inf.	68	75	82	225
Hardy, David P., Lt. Col., 250th C.A.	78	79	74	231
Wilson, Kenneth A., Capt., 159th Inf.	62	76	74	212
Hancock, William A., Sgt., 250th C.A.	58	83	72	213
Total				1119

Alternate
Jones, Eugene S., Sgt.

29. WASHINGTON STATE CIVILIAN NO. 2

Foster, Robert S. (Captain)

Cowan, Lt. (Coach)

Name	50 Yds. S.F.	25 Yds. T.F.	25 Yds. R.F.	Total
Edon, Harlan B.	65	74	84	223
Condon, Shirley A.	76	86	74	236
Foster, Robert S.	65	68	62	195
Carr, Elton O.	70	79	67	216
Glossbrenner, Norman L.	72	84	75	231
Total				1101

Alternate
Nooney, Frank.

30. MICHIGAN CIVILIAN

Lowry, J. D. (Captain)
McCleary, E. R. (Coach)

Name	50 Yds.	25 Yds.	25 Yds.	S.F.	T.F.	R.F.	Total
Pomerance, E.	59	81	80	220			
Wyandotte, Mich.							
Hinkson, R. E.	54	83	87	224			
Detroit, Mich.							
French, J. T.	59	82	79	220			
Detroit, Mich.							
Taylor, M.	72	82	64	218			
Detroit, Mich.							
Buck, R. A.	60	81	70	211			
Detroit, Mich.							
Total				1093			

Alternate
Vanetter, M. E.

31. TEXAS CIVILIAN

Wells, Percy C. (Captain)
Johnson, W. H. (Coach)

Name	50 Yds.	25 Yds.	25 Yds.	S.F.	T.F.	R.F.	Total
Corning, George T.	59	75	76	210			
El Paso, Tex.							
Leflar, Jas. W.	67	82	81	230			
McAllen, Tex.							
Raven, Jesse L.	52	82	64	198			
Austin, Tex.							
Wells, Hansell P.	66	64	46	176			
San Antonio, Tex.							
Wright, Paul	76	86	72	234			
El Paso, Tex.							
Total				1048			

Alternate
Wales, Victor, Jr.

32. OREGON NATIONAL GUARD

Spooner, Langdon H., Maj. (Captain), Ore. N.G.
Shoemaker, Carl V., Capt. (Coach), Ore. N.G.

Name	50 Yds.	25 Yds.	25 Yds.	S.F.	T.F.	R.F.	Total
Sprouse, Frank, 2nd Lt.	49	90	54	193			
Brice, Loyd J., Sgt.	79	94	76	249			
Luebben, Harry D., Sgt.	52	61	58	171			
Robertson, Valcolon, Pvt.	71	83	74	228			
Spooner, Langdon H., Maj.	58	78	10	206			
Total				1047			

Alternate
Olson, Osmund W., Sgt.

33. INDIANA NATIONAL GUARD

Middleton, Basil, Lt. Col. (Captain), Ind. N.G.
Middleton, Basil, Lt. Col. (Coach), Ind. N.G.

Name	50 Yds.	25 Yds.	25 Yds.	S.F.	T.F.	R.F.	Total
Snyder, Milo D., Capt.	68	84	77	229			
Turpin, Harry M., Capt.	55	86	84	225			
Harter, Paul D., Capt.	78	81	66	225			
Coopridge, Lehman W., 2nd Lt.	56	39	40	144			
Middleton, Basil, Lt. Col.	72	74	77	223			
Total				1046			

Alternate
Brown, Bernard A., Pvt. 1cl. Ind. N.G.

34. MASSACHUSETTS CIVILIAN NO. 1

Clapp, Raymond L., Waltham, Mass. (Captain and Coach)

Name	50 Yds.	25 Yds.	25 Yds.	S.F.	T.F.	R.F.	Total
Harrison, Benjamin	70	83	78	231			
Nicholson, A. J.	57	64	77	198			
Shaw, J. E.	74	80	65	219			
Vallancourt, Roy N.	80	88	46	214			
Wood, George O.	59	55	61	175			
Total				1037			

Alternate
Chambers, William H.

35. KENTUCKY CIVILIAN NO. 2

Gould, Henry H. (Captain)
Rehm, Oscar F. (Coach)

Name	50 Yds.	25 Yds.	25 Yds.	S.F.	T.F.	R.F.	Total
Gould, Henry H.	65	88	82	235			
Rehm, Oscar F.	57	83	54	194			
Taylor, James M.	66	69	56	191			
Waggoner, Ora J.	68	73	55	196			
Ware, Daniel L.	70	69	70	209			
Total				1025			

Alternate
Seagraves, William T.

36. OKLAHOMA CIVILIAN

Yopp, H. G., Capt. (Captain)
Louthan, Jack (Coach)

Name	50 Yds.	25 Yds.	25 Yds.	S.F.	T.F.	R.F.	Total
Berryman, J. R.	64	62	72	198			
Blankenship, John	69	74	78	221			
Findley, Al V.	56	72	65	193			
Jernigan, Roy	48	58	26	132			
Louthan, Jack	78	89	79	246			
Total				990			

37. INDIANA CIVILIAN

Brown, Richard S. (Captain)

Name	50 Yds.	25 Yds.	25 Yds.	S.F.	T.F.	R.F.	Total
Brown, Richard S.	65	64	32	161			
Twelve Mile, Ind.							
Bowling, Sam	75	83	80	238			
Huntington, Ind.							
Daubonspeck, Paul	77	74	61	212			
Milroy, Ind.							
Makielski, Dr. P. H.	76	68	48	192			
Mishawaka, Ind.							
Manis, Ray C.	66	55	58	179			
Culver, Ind.							
Total				982			

38. TEXAS NATIONAL GUARD

Edmiston, Fred W. (Captain)
Frazier, Oscar H. (Coach)

Name	50 Yds.	25 Yds.	25 Yds.	S.F.	T.F.	R.F.	Total
Carrico, Isaac B.	43	49	42	134			
Capt., 143rd Inf.							
Frazier, Oscar H.	69	76	67	212			
1st Lt., 142nd Inf.							
Heidman, Ralph M.	52	82	76	210			
144th Inf., 1st Lt.							
McFarland, Clay	56	86	77	219			
1st Lt., 141st Inf.							
Vernon, Harry M.	61	62	36	159			
1st Sgt., 141st Inf.							
Total				934			

Alternate
Sutton, William J.

39. OKLAHOMA NATIONAL GUARD

Williams, Curtis L. (Captain)
Barrett, Charles F. (Coach)

Name	50 Yds.	25 Yds.	25 Yds.	S.F.	T.F.	R.F.	Total
Barrett, Charles F.							
Maj., 179th Inf.							
Sitler, Herbert G.							
1st Lt., 179th Inf.	73	41	33	147			
Purvine, Wesley	68	85	81	234			
1st Sgt., 179th Inf.							
Ford, Delmas L.	54	64	64	182			
1st Sgt., 179th Inf.	57	53	52	162			
Stevens, Capt., 179th Inf.							
Woods, Douglas J.	59	73	61	193			
Mr. Sgt., 179th Inf.							
Total				918			

Alternate
Woods, Douglas J.

40. PENNSYLVANIA NATIONAL GUARD

Hoban, Thomas L. (Captain)
Kernaghan, Thomas J. (Coach)

Name	50 Yds.	25 Yds.	25 Yds.	S.F.	T.F.	R.F.	Total
Reynolds, Robert C.	64	81	79	224			
1st Lt., 109th Inf.							
Sanders, Harley M.	52	29	41	122			
1st Lt., 111th Inf.							
Nelson, R. L.	61	51	60	172			
Sgt. Tr. A. 104th Cav.							
Bosak, John	62	72	65	199			
Sgt., 109th Inf.							
Overdorf, Carl P.	61	69	70	200			
Sgt., 110th Inf.							
Total				917			

Alternate
Carbone, Carmine L.

41. VIRGINIA CIVILIAN

Atkins, J. H., Jr. (Captain)

Name	50 Yds.	25 Yds.	25 Yds.	S.F.	T.F.	R.F.	Total
Atkins, J. H., Jr.	69	62	71	202			
Stratman, G. T.	68	52	43	163			
Connell, M. J., Jr.	68	79	63	210			
Riley, Hugh E.	67	67	37	171			
Brockwell, Raymond H.	63	29	53	145			
Total				891			

Alternate
Parsons, Richard A.

42. KENTUCKY CIVILIAN NO. 1

Hopkins, Harry J., Louisville, Ky. (Captain)
Chapman, Joseph W. (Coach)

Name	50 Yds.	25 Yds.	25 Yds.	S.F.	T.F.	R.F.	Total
Chapman, Joseph W.	65	70	59	194			
Hopkins, Harry J.	55	66	48	169			
McCarty, Archie W.	63	47	65	175			
McGrew, Granville O.	67	53	60	180			
Longworth, Ralph N.	43	71	36	170			
Total				888			

Alternate
Kreis, Follmon W.

43. UNIVERSITY OF MARYLAND

Jensen, Willard, Sgt. D.C. N.G. (Captain)
Ward, Frank, Maj. Inf. (Coach)

Name	50 Yds.	25 Yds.	25 Yds.	S.F.	T.F.	R.F.	Total
Clark, Wilson	68	65	42	175			
Mattingly, Robert L.	58	65	67	190			
Lann, Joseph	48	56	49	153			
Davis, Raymond, Jr.	66	72	68	206			
Jensen, Willard	61	65	23	149			
Total				873			

Alternate
Mueller, Eugene F., ROTC.

44. OREGON CIVILIAN

Johnson, William A., Portland, Ore. (Captain)
Bostic, James E. (Coach)

Name	50 Yds.	25 Yds.	25 Yds.	S.F.	T.F.	R.F.	Total
Johnson, William A.	73	83	78	234			
Kaufman, Ralph W.	55	72	52	189			
Upshaw, Gairio M.	71	91	66	228			
Pearson, Hugh F.	63	75	57	195			
Bostic, James E.	6	0	15	21			
Total				867			

Alternate
Buxton, Thomas W.

45. MASSACHUSETTS CIVILIAN NO. 2

McNeil, David C., Beverly, Mass. (Captain)

Name	50 Yds.	25 Yds.	25 Yds.	S.F.	T.F.	R.F.	Total
Blaisdell, Francis K.	58	79	77	214			
Parish, Robert R.	71	79	67	217			
Richard, Charles E.	14	5	5	24			
Smith, Richard W.	50	72	74	196			
Wilmarth, Robert R.	54	65	24	143			
Total				794			

Alternate
Hurley, Walter E.

46. SOUTH CAROLINA CIVILIAN NO. 1 PISTOL

Perry, William M., Columbia, S. C. (Captain)

Name	50 Yds.	25 Yds.	25 Yds.	S.F.	T.F.	R.F.	Total
Perry, William M.	23	64	37	124			
Porter, C. C. (Coach)	65	71	50	186			
Porter, C. C.	45	69	69	183			
Richardson, George B.	25	44	53	122			
Ussery, Joe, Jr.	60	47	47	154			
Total				769			

Alternate
Brannon, Robert V.

47. NEVADA NATIONAL GUARD

Koskela, William W., Capt. (Captain)
Brown, Norman C., Capt. A.G.D., State Staff (Coach)

Name	50 Yds.	25 Yds.	25 Yds.	S.F.	T.F.	R.F.	Total
Brown, Norman C., Capt.	46	56	35	137			
A.G.D. State Staff							
Duncan, John F., 2d Lt. 115	63	46	51	160			
Eng.							
Middleton, James R., Sgt. 40	34	40	33	107			
M.P. Co.							
Robbins, Lee D., 1st Sgt. 40	50	68	72	190			
M.P. Co.							
Russell, Grover W., Tech. Sgt.	15	43	45	103			
Nev. St. Det.							
Total				697			

Alternate
Koskela, William W., Capt.

48. SAN FRANCISCO POLICE DID NOT FIRE

Boosting Pistol Shooting is the Latest N. R. A. Function

INCREASED interest in pistol and revolver shooting on the part of members and member clubs of the N. R. A. as evidenced at the 1936 National Matches and at registered handgun tournaments recently held under N. R. A. sanction has led to the organization of a Pistol Promotion Division at National Headquarters and the employment of a nationally known handgun shooter to head this new activity.

To assist in coordinating the efforts of pistol shooters throughout the nation, the Association has secured the services of Frank L. Wyman who, as a member of the Tampa Police Pistol Team, has earned a ranking as the outstanding pistol shot in the South. He will also give to less experienced shooters the benefit of a knowledge of organization among shooters which he has gained as an executive of the Florida Police Pistol League.

The primary purpose of the new "Pistol Division" will be to standardize targets and courses of fire, and also to provide handgun shooters with a uniform set of shooting rules, so that they may compare their scores with scores made by fellow shooters throughout the country. The Association will continue to cooperate actively with affiliated clubs and State Associations in the conduct of registered pistol tournaments and to boost the handgun sport through the medium of publicity whenever and wherever possible.

The very successful registered pistol matches conducted during the past few weeks reviewed below give some indication of the growing interest in this phase of our sport. Every person who has a legitimate use for handguns should be thoroughly familiar with the proper way to use them and should also be able to place his hits effectively at all times. To that end the new N. R. A. Pistol Division offers its services to handgun shooters of America.

CONNECTICUT POLICE MATCHES

PROBABLY the best guarded property in Connecticut on Sunday Sept. 20th was the range of the Silver City Gun Club, in Meriden, where sixty-six police officers from various Connecticut departments gathered to participate in the second annual revolver and pistol matches held in that city.

Chief M. B. Carroll of Meriden is a firm believer in marksmanship for police officers. He operates several matches a year for his own men and is the first chief in the state to sponsor competitive matches for the various departments.

Only two matches were scheduled, an individual match of 20 shots slow fire, and a team match, open to teams of five, slow time and rapid fire, all shooting at 25 yards.

Over \$250 in merchandise prizes were awarded to the winners. Prizes consisted of silver sets, table and floor lamps, smoking sets, water and cocktail sets and other merchandise.

The Hartford Courant trophy, provided through the interest of the editor George Armstead, goes to winner of the team event, with gold, silver, and bronze medals for each member of the first three teams.

There were twelve teams of five in the team match, first place being won by New Haven Police Team No. 1 with 1377 points, second, Hartford No. 1 with 1369, and third, Hartford Police No. 2 with 1325 points. Teams were also entered from New London, Torrington, Meriden, Norwalk, and Westbrook Barracks State Police.

INDIAN HILL RANGERS POLICE MATCH

THE first annual Tri-State Pistol and Revolver Matches, conducted by the Indian Hill Rangers, and fired over their new range near Cincinnati, Ohio, August 22 and 23, marked the beginning of a new annual competitive shoot which bids fair to become one of the country's outstanding events in the future, if the attendance and conduct of this first one is any criterion.

The range, constructed by members of the Ranger organization during their spare time, was pronounced nearly perfect by the majority of the marksmen who attended. It consists of a ten butt 50 yard course and a similar 25 yard course, also equipped with ten butts and firing points. Situated in a valley surrounded by high hills, while on three sides, the huge trees provide shaded firing points, the light, wind and other range conditions are as good as can be found anywhere.

The Ranger organization, under the guidance of Capt. H. E. Wilson, Commanding Officer, has spared no effort to provide every facility for the convenience and comfort of the visiting marksmen, and many favorable comments were made by the men from every section of the country who took part in the various events.

The Rangers, an organization of private police officers, of the Indian Hill section of suburban Cincinnati, have attained a high degree of efficiency in their work, and are recognized as one of the outstanding or-

ganizations of their kind in the United States. Their decision to sponsor an annual shoot of championship calibre, was prompted by their desire to popularize the great sport of pistol and revolver shooting in their own community. A. H. Chatfield, Jr., Vice President of the Board of Trustees, responsible for the organization and maintenance of the Rangers, and himself an ardent follower of pistol and revolver marksmanship, has been the moving spirit in the promotion of the annual matches.

As a result of this year's success Mr. Chatfield and his associates are already at work on plans for the 1937 event which will be of a nature to draw the finest handgun marksmen of the entire country to Cincinnati for the two day affair. A happy choice of dates for the meet places it just prior to the Camp Perry matches, and since Cincinnati is only a few hours from Camp Perry, the majority of the marksmen who annually attend Camp Perry will find it easy to arrange their schedules so as to participate in the Ranger shoot before going on to Perry.

Among the notable shots who participated in the matches this year, were the Los Angeles Police teams captained by Lieut. Joe Dircks and containing in their group such crack shots as Joe Engbrecht, Lee Young, Sgt. Mark E. Wheeler, R. J. Nowka, E. E. Jones, A. M. Strand, J. P. Donland, C. E. Ward, and W. R. Stark.

Other nationally known shots present included Lieut. D. C. Reeves, Nashville, Tenn., former open pistol and revolver champion of the Southeast; Ray C. Bracken, Columbus, Ohio; besides a large list of marksmen from Ohio, Indiana and Kentucky.

In addition to the two Los Angeles Police Teams, the Ohio State Highway Patrol, The Hamilton County Deputy Sheriffs, The Norwood (Ohio) Revolver Team, The Kenton County (Ky.) Revolver Team, were among the organizations represented in the team events.

Lieut. E. E. Jones, Los Angeles Police, won the .22 Caliber Championship with a score of 287 and also the Grand Aggregate Match while J. J. Engbrecht also of Los Angeles won the two center fire matches scoring 288 in the .38 caliber match and 282 in the .45 caliber event.

THE ANNUAL TEANECK POLICE SHOOT

A CROWD estimated at from 8000 to 10,000 watched the firing of the Fifth Annual Teaneck Police Pistol Matches held on this popular New Jersey range August 15th and 16th. One hundred and thirteen teams and thirty individual shooters attended.

Officer Adolph Shuber of the New York Police Department shot a perfect score

of 300 to lead his team to victory, duplicating their win of 1935. New York scored 1189 to top the D. & H. team by a single point. Strange to say this was the same difference that separated the two teams a year ago. The New Jersey State Police finished with 1180 for third place and were followed by Baltimore, New York No. 2 and Washington, D. C.

In the Class C race for United States service teams the Coast Guard from New York came in on top with 1140 and the Cavalry tied the score but were outranked.

The course of fire used at Teaneck consists of slow and timed-fire at 25 yards and rapid-fire at 15 yards. The Army L type target is used but to save ties being fired in many matches an inner ring is printed in the bullseye similar to the X ring on small bore targets.

This inner ring came into good use during the scoring of the Slow-fire match when 7 possibles were made. A. J. E. Shay of the Navy Yard Police, Brooklyn, N. Y. centered his group best however and ended with 7X to win.

This year a women's team was entered for the first time and scored 950 for the team.

WASHINGTON, D. C., POLICE MATCHES

THAT the nation's capital police are not falling behind in pistol shooting interest was proven October 5th when over 150 competitors fired in the first of what is to be the Annual Washington Times—Metropolitan Police Pistol Matches.

The first match was for the Buchholz trophy and 15 four-man teams from the police divisions of the District of Columbia competed. All precincts in the city, with but one exception, were represented and the First Precinct scored 1,371 to win. The Third Precinct team came in second scoring 1,345. H. E. Brodie of the detective bureau won the gold medal for high individual score with 287 while R. L. Decker's 284 was good for second place.

In the open team match 16 teams from Pennsylvania, Maryland, New Jersey, Virginia, and the District of Columbia competed. Four government teams including one from the White House Police entered the match. The Metropolitan Police Team No. 1 scored a nice 1,184 to win while the police team from Lower Merion, N. J. took second place with 1,161 and the White House Police team won the bronze medals. Class B division in this match for teams scoring less than 1,000 points was taken by the Lorton Reformatory team with 999.

The Washington Times Trophy match between teams from Maryland, Virginia and the District of Columbia created a

great deal of interest and again the D. C. police proved the winners with 1,463. Gold medals were awarded the high individual on each team and these were won by McCormick of D. C. with 298, Buckworth of Maryland with 290 and Rush of Virginia with 272. McCormick's 298 also won a Colt 38 O. M. target revolver given by Mr. L. J. Williams, Vice-President of Fries, Beall and Sharp hardware dealers of Washington, D. C.

Lunch was served on the grounds to all competitors during the noon hour and after the matches were completed everyone was entertained in the camp mess-hall where, following the dinner, medals and trophies were awarded by Major Brown, Washington's popular Superintendent of Police.

INDIANA VIGILANTES' SHOOT

ACCORDING to the Summaries received from the Indiana Bankers Association Protective Committee, sixteen pistol teams, seventy-two individual pistol shooters, eighteen rifle teams and sixty-six individual rifle shooters participated in the 10th annual match conducted by the State Bankers Association and held at Fort Benjamin Harrison, Sunday, September 13th.

The Kosciusko County Association team of Harmon, Snyder and Stamper scored a total of 599 to win first place in the pistol match and were awarded a silver cup and medals.

First place in the Individual Pistol Match went to H. C. Almy of Delaware County with a score of 205. Former winners of both the Individual Rifle and Pistol Matches were not eligible for prizes but were given honorable mention and were allowed to compete in all team matches.

In the rifle division the Allen County Association team composed of Houck, S. J. Smith and Girardot won the first place cup with a score of 576 while the Individual Rifle Match was won by Houck of the Allen County team with a total of 197.

These matches are open to all members of the Vigilante Organizations as well as to all bank officials and employees.

They are sponsored each year by the Indiana Bankers Association because the officers of that organization realize that it is for their own interest that their employees know how to handle firearms quickly and shoot them accurately. It is stated in their match program that all county associations having Vigilante Organizations are receiving the actual cash benefit of a 10% reduction in robbery and burglary insurance.

It is to be hoped that in the very near future many more Bank Associations will

follow Indiana's lead and see to it that its members are properly trained in handling small arms. The "do nothing" attitude with the assumption that this is a matter for insurance companies to worry about has cost thousands of dollars in insurance premiums, to say nothing of the many lives needlessly sacrificed.

DELAWARE TIDEWATER CHAMPIONSHIPS

THE four days program of pistol matches comprising the 1936 Tidewater Championships got under way Thursday October 1st, on the Marksman's Club Range at Wilmington, Delaware.

Thursday afternoon was devoted to police matches entirely and 14 teams came to the line for the starting whistle. Delaware State Police were well represented with 4 teams while the Wilmington Trust Company had 3 and the Police Department entered 2 teams of 3 men each.

The first match went to Station #4 of the State Police with a three man team total of 834 over the 25 and 15 yard course. Wilmington Trust #1 team was only 6 points behind for second place and the Wilmington Police team #1 third with 804.

Officer L. Hamilton of the police team shot 257 over the National Match course to win first place in the Individual Police Match. Davidson of the State Police finished with 252 for second.

The Langrish Match further proved that the Delaware Police shoot fast and straight when Tom Lamb of the State Police made 10 hits in 12 seconds to win and Beswick and Hamilton had a shoot-off for second place, each having scored 9 hits. Beswick won the shoot-off and took second.

Many city officials and bank officers together with Captain Ray of the Delaware State Police came to the range to witness firing of the matches, a tribute to the officers and employees as well as further evidence of the growing interest in pistol shooting both as a recreation and as a necessary means of properly training law enforcement officers.

Friday was devoted to re-entry shooting while Saturday and Sunday saw the firing of the open matches.

Walter Walsh of the Department of Justice won the Open Grand Aggregate with 1,124 and was awarded a gold medal and a Colt O. M. target revolver.

D. A. Dividio of Fort DuPont scored 449x500 to win the aggregate open to residents of Delaware and Mrs. Lord of Marshallton won second in this event as well as first place in the ladies match.

THIRD ANNUAL MARYLAND STATE POLICE MATCHES

ONE of the most successful police pistol matches held in the east was fired over the beautiful Camp Ritchie Maryland range on Sept. 23rd and 24th. Eighty-eight individuals fired in the open match Wednesday and on Thursday sixteen five man teams faced the targets. The regulation Army L target was used for both matches. Slow and Timed fire was at 25 yards and Rapid at 15 yards.

J. L. Herron of the well known D. & H. Railroad Police team scored 295 for first place in the open individual with many of the eighty-seven shooters right on his heels as the eleventh place man totaled 291, only 4 points under the winner. This gave Herron the beautiful Von Schlegell trophy plus a gold medal to add to his collection. Dean of the New Jersey State Police and Hathaway of Lower Merion annexed the second and third place medals, both with 294 scores. Out of the first 15 place winners eleven fired perfect scores at rapid fire which indicates that the crook facing these men would do better to run than to try to out shoot them.

The team match was fired Thursday in a driving rain which failed to take the usual toll of winning scores. The West Virginia State Police fired seven possible scores during the three stages and won the match 1480 x 1500. Stout led the team scoring with a nice 299. Close behind came the New York City police with 1476 less than a point per man under the top score while the New Jersey State Police took third with 1475. That kind of a finish leaves the winner in doubt right to the end and always provides a fitting climax to the day's program.

Each of the three top places carried trophies for the team and silver or bronze medals.

In the match open to members of the Maryland State Police only Officer G. M. Hunt proved himself the best by winning with a 286. This match also carried a trophy for first place. Officer Buckworth scored 282 for second place and a silver medal and Officer McCoy dropped another point and received the third place bronze medal. Buckworth had the only possible fired in this match which he made at 25 yards slow fire.

Supt. Garey of the Maryland State Police has just announced that the same matches will be held again next year on about the same dates. Police departments and law enforcement organizations throughout the east should start now making plans to attend, as by not doing so they are missing a fine opportunity to shoot against some of the best shots in the country, besides picking up many ideas of value to them in their daily duties.

OREGON TEAM EVENS SCORE WITH BRITISH

IN THE OSRA International match, (postal) fired in connection with the Oregon state small-bore spring tournament, in which the team representing the U. S. fired in competition with the Yorkshire, England, Rifle association, the Oregon team evened the count at 1-all by outshooting the "Tommies" 3942 to 3916.

The first of these annual matches, fired in 1935, was won by the English team 3919 to 3914.

OREGON STATE RIFLE ASSOCIATION

	50 yds.	100 yds.	T'tl.
H. Green, La Grande.....	200	198	398
N. Baldwin, Portland.....	199	198	397
H. F. McDonald, Portland..	199	196	395
E. R. Poppleton, Portland..	199	196	395
M. Jones, Astoria.....	198	197	394
D. Bjornevik, Portland.....	198	196	394
R. Meister, Seattle.....	198	196	394
J. H. Woolford, Roseburg...	198	196	394
E. Barrien, Portland.....	200	194	394
R. S. Foster.....	195	192	387
Bremerton, Wash.			

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Witness—Mr. E. F. Sloan.

OREGON STATE RIFLE ASSOCIATION V YORKSHIRE RIFLE ASSOCIATION

	50 yds.	100 yds.	T'tl.
C. C. Sonley.....	199	199	398
A. V. Staniforth.....	197	198	395
C. F. Clyne.....	196	197	393
J. Foster.....	198	194	392
A. Johnson.....	199	193	392
H. Barber.....	195	196	391
W. T. Buttery.....	195	196	391
R. Rodgers.....	198	192	390
A. G. Banks.....	194	195	389
A. G. Keyworth.....	197	188	385

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Witness—R. W. Gleadow, Council, S.M.R.C.

THE WAKEFIELD SERVICE MATCHES

THE tournament of the United Services of New England held August 1st to 9th, at Camp Curtis Guild, Wakefield, Mass., was one of the best attended service rifle and revolver competitions which has been held anywhere in the country outside of the National Matches at Camp Perry.

The range has been greatly improved since last year with additional targets at all ranges and an entirely new pistol range constructed.

Coming as it did immediately preceding the big Camp Perry meet, and because the events scheduled provided excellent training under National Match conditions the Annual New England Meet was attended by numerous state and service teams, including the entire U. S. M. C. and U. S. C.

G. squads. For this reason competition in all the matches was keen although winning honors in most events went to the Marines. In eleven .30 caliber open individual events, the Marines won 9 firsts against 2 firsts for the Coast Guardsmen.

The program included 47 rifle and pistol matches, scores made in which unfortunately cannot be published due to limited space.

The largest match of the week was the 10 man team Hayden Trophy Match, fired over the "National Course" and was won by the Marine Team #2, score 2863 followed by the Coast Guard "Z" Team scoring 2857.

In the Cutting Match at 1,000 yards (feature individual event) there were 169 contestants and the following eight placed as shown:

	Service	Score	V's
1. Phinney, W. A.....	USMC (Trophy)	50	8
2. Blakley, J.	USMC	50	6
3. Harrington, M. E....	USCG	50	6
4. Wilson, M. O.....	USCG	50	6
5. Heath, J. E.....	USMC	50	5
6. Barrier, T. E.....	USMC	50	4
7. Schoolcraft, O.	USMC	50	4
8. Beecham.....	USA (Cav.)	50	3

The matches were conducted by the following personnel. Executive Officer, Maj. Gen. Walter E. Lombard, M. N. G. Retired, Assistant Executive Officer, Lt. Col. C. David Berg, M. N. G.; Chief Range Officer, Major Merritt A. Edson, U. S. M. C.; Statistical Officer, John H. Pembroke, Assistant Statistical Officer, John F. Stamm, U. S. M. C.

SOUTHERN OREGON AND NORTHERN CALIFORNIA LEAGUE

A TOTAL of seventy-seven shooters fired the five league matches comprising the Southern Oregon and Northern California Small-bore League which was recently concluded with Yreka again high team. Yreka also scored 9,763 points to win the summer league and the Medford club took second only 43 points behind.

The New N. R. A. point system of classification was used for the first time here although only twelve competitors fired all matches in the league shoot.

In the individual rating Dodge of Yreka finished with 10 points for top honors, his nearest rival being Waddell of Medford with 5 points.

Under this new system the winner of a match having a minimum of 25 entries and not more than 29 receives 2 points credit and one point is awarded the runner up; in a match having from 30 to 39 entries first place credit is 3 points, second place 2 points and third place one point, etc.

C	D	D	S	D	C	S	D
8	10	9	K	J	4	7	6
S	D	D	H	C	H	H	S
6	K	5	6	5	A	Q	8
C	H	C	D	S	D	S	H
Q	3	9	A	3	7	9	7
H	S	D	C	H	C	S	C
9	A	Q	7	4	A	J	10
H	H	C	H	D	S	D	S
10	5	J	K	3	10	4	Q
H	C	C	S	H	S	D	C
8	K	3	4	J	5	8	6

This target has proven very successful for turkey and merchandise matches held by the Alhambra (California) Police Revolver Association. Made up on paper 12" x 12" allows a space 1½" x 1" for each card and separates them sufficiently to allow no doubles. Each competitor fires 5 shots, thereby dealing himself a poker hand, and high hand takes the prize.

FIFTH ANNUAL MINNESOTA SHOOT

THE fifth annual Northern Minnesota Small Bore Shoot, sponsored by the Virginia Rifle Club, was held July 18 and 19 on Virginia's thirty-five firing point range.

When the matches opened in earnest on Sunday morning, Doc Swanson was on hand with a group of Minneapolis shooters while Carl Frank, of Rochester—always bad medicine in any company—was also ready and raring to go. These two men immediately set to work dividing major honors between them. Swanson drew first blood by winning the free rifle standing match with 182 x 200, but Frank came back with victories in the 50 yard individual with 200-18x and in the 100 yard individual with 200-15x.

Swanson again broke into the win column in the 50 meter match where his 199 x 200 topped C. L. Wood, of Heyworth, Ill., by one point, won aggregate with a total of 994 out of 1000 possible points. Wood was second with 991 while Frank landed third with 990.

MARINES HIGH IN CALIFORNIA

THE Marine Corps Base Rifle Team, competing with thirteen member teams of the California Rifle and Pistol Association in the .30 caliber matches of that Association at San Luis Obispo, California, on June 19, 20 and 21, won the Inter-Club Team Match with a score of 532 points out of a possible 600.

The team for this Match, consisting of First Lieutenant Albert E. Moe; Sergeant Wallace Henry; Sergeant Vincent E. Boyle; Corporal James W. Dorsey; Corporal Johnny Jennings; and Private First Class William C. Eggers, all of the Marine Corps Base at San Diego, was presented with a trophy, and the individual members of the team each received gold medals.

The trophy presented is a bronze plaque mounted in mahogany, bearing bronze figures of riflemen in prone, standing, and sitting positions, and the inscription "State Championship Trophy, California State Rifle Association Team Match." The trophy is competed for yearly by

teams of the California State Rifle and Pistol Association in their annual matches.

In addition to the above match, members of the Marine Corps Base Rifle Team participated in eight other matches during the three days' meet.

NEW MEXICO STATE CHAMPIONSHIP

ON JULY 25th and 26th, fifty-four riflemen competed at Santa Fe for the State Individual and Team Championship and for places on the Camp Perry Civilian Team. The Santa Fe Rifle Club team, lead by L. D. Wilson, high point man and winner of the State Individual Championship, won the title of "New Mexico Rifle Championship Team for 1936," and the medals and trophy which go with such place.

It was noticeable that in practically every case the scores fired in the match were much higher than those fired in 1935. The high individual competitors see-sawed back and forth through the entire match.

At 1000 yards, which was the final stage, Paul Wright fired a 47, giving him a total of 233. L. D. Wilson fired a 48, tying Paul Wright's score, but giving Wilson the championship title by Creedmore count. L. C. Osborn fired a 45 at 1000 yards, which dropped him to fourth place with a score of 231, as C. H. Howell fired a 46, which tied Osborn's score and gave him preference by Creedmore count.

The high ten individuals in the match were awarded appropriate medals and had scores as follows:

L. D. Wilson, Santa Fe, 233; Paul Wright, Silver City, 233; C. H. Howell, Albuquerque, 231; L. C. Osborn, Santa Rita, 231; H. B. Taylor, Las Vegas, 230; John Alberts, Roswell, 228; B. L. Smith, Santa Fe, 227; Ed. Raymond, Roswell, 226; C. L. Eimer, Roswell, 225; G. D. Warr, Roswell, 225.

The team scores in the match for the high five men on each team were as follows:

Santa Fe Rifle Club, 1129; Roswell Rifle Club, 1127; Duke City Rifle Assoc. (Albuquerque), 1108; Hatch Rifle Club, 1082.

In 1935, Ray Clear of Hatch won the Individual Championship with a score of 232, and the Hatch Rifle Club won the Team Championship with a score of 1088.

The weather conditions throughout the match were excellent, and the entire match went very smoothly, due in a large measure to the excellent way in which Capt. O. L. Wood of Santa Fe handled the match as Range Officer.

Everybody left the match with a feeling of good will, and with a determination to shoot a better string next year when we again meet to shoot it out.

NATIONAL CAPITAL FALL TOURNAMENT

FOR two successive years the National Capital Rifle Club gambled on Washington's uncertain spring weather in an endeavor to hold in the nation's capital a successful small bore tournament. That was back in 1934 and 1935. On each occasion the shoot was a wash out—both literally and actually. Cold blowing rains cut down the attendance and made shooting anything but a pleasure to those faithful few who came out despite the inclement weather.

With two financial flops behind them, the club was naturally reluctant to stage a tournament in Washington during 1936. But the interest of genial Secretary Tom Arnold could not be cooled so readily and encouraged by many notable small bore shooters who had looked forward to attending the meet, Arnold finally announced that the club this year would capitalize on "October's bright blue weather", and hold its 3rd Annual National Capital Tournament October 9-10 and 11, rather than in the spring as formerly.

Came the 9th of October, and with it the same blowing showers out of the east—showers that the Washington weather man has come to regard as a never failing sign of continued rain. Only a few re-entry targets were fired between showers on that first day, and when the next day dawned with pools of water on the newly sodded firing line and continued rain threatening, many shooters began to pack up. About the middle of the morning, however, the skies cleared rapidly and it was decided to go ahead with the program. Because the bad weather had held down attendance it was possible to use only those firing points that had properly drained, although in the language of the shooter, the entire firing line was exceedingly "gluey".

A total of 47 small bore shots from ten states registered during the week-end. Most of them arrived on Saturday and participated in all the events, the two matches scheduled for Friday having been postponed until the following morning.

Winning honors were pretty well divided among the many ace riflemen who were present. A possible 200 plus 14x made by Tom Lewis, now attending Georgetown University, was good for first place in the 50 yard event while J. C. Lippencott, Jr., took the 100 yard match on a score of 199 with 12x. In the Short Range Any Sight Individual, Eric "The Swede" Johnson topped the field, scoring 399 and W. H. Oakey, Jr. turned in a good 396 to take the Potomac Dewar with metallic sights. W. P. Schweitzer and his partner Lippencott cleaned up both the Short Range 2 man events on an identical total of 792 in each match, while Johnson and

Ferguson took the 50 meter 2-man on their team total of 398.

In the feature Aggregate Match for possession of the handsome Hearst trophy presented by the Washington Herald, Johnson and Schweitzer finished with identical totals of 1186 x 1200. The trophy was awarded to Johnson by Lot, the gold medal went to Schweitzer and the two shooters divided the cash prizes.

The capital shoot was a model tournament both from the standpoint of efficient management and as regards the range layout. With a better break on the weather, the meet might also have been in point of attendance one of the outstanding small bore tournaments of the year.

SAVANNAH SHOOT POSTPONED

THE Southeastern Pistol and Small Bore Rifle Tournament which was to have been held in Savannah, Georgia, November 11th to 15th has been postponed indefinitely. The Savannah Rifle Association, sponsors of the tournament, have been unable to complete their new range on schedule and must therefore postpone the match until a later date. The Savannah Shoot will probably be held just before or immediately following the Mid-Winter Matches in Florida. The new date will be announced in the American Rifleman as soon as possible.

TIDEWATER RIFLE MATCHES

SHOOTERS attending the annual Tidewater Championships at Wilmington, Del., October 2 to 4, found that the Farnhurst range had been almost completely rebuilt. The three small bore ranges, all on a common firing line, had 10 targets available at 200 yards, 24 at 50 yards and 24 at 100 yards, and there was ample space between them so that all firing points could be used at the same time.

On Friday, the first day, interest was almost equally divided between re-entry shooting and radio reports of the World Series massacre to which the Giants were being subjected. The first real match, the Blue Hen Special, was held the next morning and proved that R. D. Triggs of Madison, N. J., was still in the excellent form which won him a place on the 1936 Dewar team at Perry. His 398 with scope sights over the Dewar Course won the event for him. Arthur Bockman of Ridgefield, N. J., was runner-up with one point less.

Triggs continued his excellent shooting all during the matches and carried home a medal or a merchandise prize from almost

every event in the program. He took first place in the Dewar individual with 397, third in the 200 yards any sights with 188, second in the 50 yard individual with 200-14x's, second in the 200 yard iron sights with 190 and second in the Swiss match with a run of 38 bulls. He had a commanding lead in the aggregate and in addition teamed with Maj. M. R. M. Gwilliam of Bloomfield to take the long range two-man event. The Palmyra, Pa., team of R. D. Berkheiser and J. H. Birkenbrine, romped off with the short range two-man event by turning in a pair of 396's, excellent scores considering the tricky wind which was blowing at the time, and Birkenbrine maintained the pace to win the 50 yard event with a 15x possible.

The Du Pont trophy, emblematic of the state championship, was taken by S. S. Apostolico of Wilmington with a 395 over the short ranges and 185 at 200. Second place went to S. L. McAllister, also of Wilmington. Another member of the host club, F. C. Wince, copped the 200 yard any sights open match with 189 x 200 but Harry Blom of Pleasantville, N. J., bettered this score by two points in winning the iron sights event.

The Swiss match, fired on the eight inch bullseye as the finale of the tournament, brought out some interesting developments when four men, Gwilliam, Triggs, Birkenbrine and Dewey Blackstone of Philadelphia, ran their strings over twenty shots. Gwilliam proved to be the most durable man in the crowd and took first money with 40 bulls.

FLINT CLUB IDEA HELPS BREAK INDOOR TIES

THE second annual central Michigan small bore tournament was held at the indoor range of the Flint Gun Club on April 18th and 19th. The tournament consisted of six matches and there were 46 entries, including six teams from as many cities.

The Flint Rifle Club #1 Team scored 1354 x 1500 to win the trophy which is presented annually by The Central Michigan Small Bore League. Individual winners included the following:

Individual Standing, L. Jackson, Shiawassee Gun Club, 87; Individual Sitting, L. Jackson, Shiawassee Gun Club, 97; Individual Prone, J. W. Street, Shiawassee, 100; (5x) Individual Championship, Maurice Seavey, Flint R. C., 280.

All shooting was at 50 feet and it was agreed by the competing members that a "10" that did not touch the nine ring was superior to a "10" that did. This method of scoring was used and it proved very helpful in breaking ties, especially in re-entry matches.—JNO. C. WHITEHEAD, Secretary.

ANOTHER SUCCESSFUL MAINE SHOOT

PERFECT smallbore shooting weather plus the Kennebec System of awarding prizes, as described in the January 1935 AMERICAN RIFLEMAN, made the Second Annual Sunday-Labor Day Shoot of the Lincoln County Rifle Club at Damariscotta, Me., the best events of its kind ever held in the New England States. Registrations show that of the one hundred and fifty-two shooters, forty of them represented six Massachusetts clubs and one club each from New Hampshire, Rhode Island and New Jersey, the rest coming from Maine.

J. W. Cole, of Newton Center, Mass., won first prize in Class A, a Model 54 Winchester 220 Swift, outranking E. E. Haskell of North Anson, Me. Haskell's prize was a H. & R. Sportsman revolver. Third place was tied three ways, Capt. T. J. Walker, Fort Devens, Mass., Weston Young, Thomaston, Me., and John Crowley, Concord, N. H. Walker outranked Young, who outranked Crowley, giving Walker the Tapatco Sleeping Bag, Young the hunting coat and Crowley the Weaver scope. Incidentally, Young had fourteen possibles to his credit. Six other shooters finished in class A, five of them having possibles. They finished in the order named: R. Goodwin, Billerica, Mass.; B. H. Pratt, Portland, Me.; V. F. Batteese, Damariscotta; Kendall Cross, Solon, Me.; Frank Clough, Madison, Me.; and A. Murphy, Lynn, Mass.

In the 200 Yard match Kendall Cross won first place both days. E. E. Haskell and M. Lenfest, Wakefield, Mass. second and third the first day and A. B. Call, Pittsfield, Me. and A. G. Mello, Lexington, Mass. were second and third Monday.

The 20 Yard pistol match was won by W. K. Thaxter, Reading, who outranked J. W. Northcott both having 179. J. W. Cole was third. On Monday Thaxter was again winner outranking M. Kliman with scores of 184. J. W. Cole was again third with 168.

The affair was climaxed with a free lobster stew and clam bake to all registered shooters who are looking forward to a bigger and better match next year.

ILLINOIS STATE CHAMPIONSHIP

THE outdoor small bore program of the Illinois State Rifle Association concluded on September 20 with the firing of the annual Illinois state championship, an any-sight event. The revised course of fire was twenty shots each at fifty and one hundred yards and ten shots at two hundred. Fifty-eight ambitious and aspiring bull-shooters assembled at the Fort Sheridan range while the sun was yet peeping over Lake Michigan, back of the butts.

Though primarily an Illinois event, the occasion had something of an interstate atmosphere with the presence of that rambling rifleman, E. N. Moor, Jr., of Detroit (Mich.), and Wes Hansche from Racine (Wis.), with a supporting cast of Southeastern Wisconsin deadeyes that included E. F. Sommers of Milwaukee.

While the Illinois big guns were eying each other speculatively, and with proper disdain, Wes Hansche, iron sights and all, eased himself into a commanding position with a 490 that clinched the gold medal and the handsome "E. L. Lord trophy." It should have been a possible, of course, but we all know how those things happen. There was quite a brisk breeze blowing that did sundry and terrible things to well-intentioned shots—especially at two hundred yards.

Fred Johansen was number one man in the season's small bore aggregate which included the Individual Dewar and Small Bore Wimbledon. Brad Wiles and Ray Converse were second and third in order named.

NEW ENFIELD RIFLE NOW \$12.50

The Secretary of War has recently approved the reduction in price of the U. S. Rifle, caliber .30 Enfield (new) from \$20.00 to \$12.50. This approval was made as a result of a recommendation by the National Board at its meeting at Camp Perry, Ohio, on September 10, 1936. The reduction in price will be effective at once.

RHODE ISLAND CLUB SHOOT WELL ATTENDED

A RECORD breaking crowd marked the second annual shoot of the Roger Williams Rifle and Revolver Club held Sept. 20th in Greenville, R. I.

Seven matches were listed and the firing line was full from nine o'clock until it became too dark to shoot.

The outstanding winner was Chesley Elroy of the Arlington (Mass.) Rifle Club who won the slow fire revolver match, the aggregate match for rifle and revolver and was high man on his club's rifle team.

Waldo Rouviere of the Roger Williams Club made the highest score in the individual rifle match, winning this event with 399 over the Dewar course. He was followed by Jack Robertson of the same club with a 398 and Roland Lareau of Woonsocket was third with 397. The women's prize in this event went to Mrs. J. W. Cole of the Arlington (Mass.) Club with a score of 396 and the junior prize was won

by Miss Ruth Crooker of the Westboro R. & R. Club, Westboro, Mass., with 394. Miss Crooker is 15 and has only been shooting since last May.

There were four teams entered in the Rifle Team Match, the event being won by the Arlington Rifle Club with a score of 1576 out of a possible 1600. The Woonsocket Rifle Club was second with 1563 and the Roger Williams R. & R. Club third with 1550.

The slow fire revolver match was won by Chesley Elroy of the Arlington Club with 296. H. Kaufman of the Providence Revolver Club was second with 289 and E. W. Barden of Johnston, R. I. third with 288.

The rapid fire revolver match was won by Garland Robbins of the Old Stone Bank with 278. B. B. Berrie of the same club was second with 276 and Frazier Doyle, also of the Old Stone bank was third with 268.

In the revolver Team Match fired over a modified National Match course, the slow fire stage being at 50 yards and the timed and rapid fire stages being fired at 25 yards with 30 and 15 second time limit respectively, all on the Standard American Target, the Number one team of the Old Stone Bank was hard pressed by the team of the Roger Williams Club but the prize finally went to the bankers, score 1040.

CONNECTICUT RIFLE MATCHES

THREATENING weather failed to affect attendance at the Fall Championship matches of the Connecticut State Rifle and Revolver Association held on the range of the Silver City Gun Club in Meriden September 27th, and 98 competitors made entry.

Forty firing points were in use all day, and the double target system was used.

Outside the re-entries, in which over 250 targets were fired, there were five matches and two aggregates completed. The weather was dark and cloudy, and a strong wind made high scores difficult.

To reorganize the Southwestern Connecticut Rifle League for the coming indoor season George Wilkinson of Bridgeport had called a meeting to be held on the range at 11:30 A. M. There were delegates present from the Danbury Rifle Club, Cos Cob Rifle and Pistol Club, Wepawaug of Milford, Quinipiac of New Haven, Norwalk Rod and Gun Club, Brass City in Waterbury, Bridgeport Rifle Club and others. Arrangements were made for both the Southwestern Connecticut and the Fairfield County leagues to start their gallery matches early in October. This success so pepped up George that he went out and promptly won the Small Bore State Champion for 1936, shooting 399 over the Dewar course.

CLUB NOTES

The second Annual Pistol Tournament held under the sponsorship of the Maine State Rifle and Pistol Association was on the U. S. Rifle Range, Auburn, Maine on September 19th and 20th. The entry list was not as large as expected but everyone reported a fine set of matches and it is certain that this tournament will grow from year to year.

The Danbury (Conn.) Rifle Club held its first Annual Outdoor Field Day for pistol shooters on September 20th. Everyone attending reported such an excellent program that plans already are under way for making this an annual affair and perhaps incorporating a winter shoot in the local program.

The Biwabik (Minn.) Rifle Club has recently reported that Northern Minnesota soon will have a new .30 caliber range which is now being built thru a W. P. A. project. Targets at 200, 300, 500 and 600 yards will be provided under the present set-up with a 1000 yard range available later if desired.

Forty-four shooters entered the Second Annual Northern Minnesota .30 caliber match held August 30th on the old range and R. Hubert of Duluth came through with a total of 242 to win the trophy and gold medal. D. Shumway of Superior, Wisconsin took second with 241 and W. Kerwin of the same city shot 239 for third place.

Results of the shoot held on the Illinois Gun Club range Sunday, September 27th which were sent in by Secretary Clayton Hunt of that organization indicate that some good scores were fired despite most distressing weather conditions. A number of shooters who had traveled in excess of 200 miles were present. The feature Dewar Match was won by G. L. Wood with 399 while O. E. Crockett dropped 2 points at 100 yards for a score of 398 and second place. Paul Roe shot 396 to take third in the individual.

In the Five Man Team Match over the same course the Mount Vernon team shot a total of 1970 every man on the team scoring 394.

C. F. Hirdler had to shoot 276 in the first revolver match to head the list while Clark Luther and George Kingery took second and third respectively. C. A. Norris nosed out Hirdler in the second pistol match of the day by one point but again tabulation of scores showed Kingery in third place.

The East Bay Rifle Club of Berkeley, California report that they are holding regular .30 caliber rifle shoots on second Sunday of every month. These are fired over the Bay Counties Range and consist of Course "C" one month and Course "D" the next. They are also competing in the shoots of the North Bay Rifle League which has eleven members and at present hold fourth place with one more match to be fired. Anyone interested in joining this club should get in touch with Mr. P. N. Bayliss, 1943 Cedar St., Berkeley, California.

The Connoquessing Valley Gun and Rod Club held its second annual Labor Day Rifle Match this year on their range at Jeleniope, Penna. Six individual Matches and an aggregate were on the day's program and as one-half were with iron sights and the balance with any sights, plenty of shooting was provided for everyone. Forty-seven competitors came from four states to take part and all are in hopes this will continue to be an annual affair in Pennsylvania. Jack Bradley won two individual matches as well as the grand aggregate. Charles Harmer finished with a score of 1171, only 9 points behind Bradley to take second place and third medal was won by Loury Smith.

A turkey shoot of interest to everyone in Northwest Texas, Oklahoma and New Mexico is being planned by the Quanah and Chillicothe Rifle Clubs for November 8th. It will be held on the range of the Quanah Club. In order to give all an even chance of winning there will be three classes according to the individual ability of the shooters as everyone should go home with his Thanksgiving Day dinner well provided for. .22 caliber rifles and any

caliber pistols are the specified guns to be used. For further information get in touch with Dr. Rudy G. Warner, Quanah, Texas.

On Sunday September 27th the Annual N. R. A. Club Members Match was held by the Clarksburg (Penna.) Sportsman Club. Course of fire consisted of once over the popular Dewar course and J. B. Smith won with a 393 while C. Trent placed second with 390. Scores were not up to normal on account of rain and high winds.

A fine day greeted the shooters who came out to the Glendale shooting Club Range Sunday October 4th to shoot in the City-County Championship Rifle and Pistol Matches. These matches are held by this club on their Kirkwood, Mo., range. Two perfect scores were fired in the rifle matches over the Dewar course, one by E. Brown of Alton, Ill., to win and the other by Wm. Woodring, National Small-bore Champion. Brown's score outranked Woodring's to win the match. Tiefenbrunn also of Alton placed in third place with 399.

E. G. Brown of Maplewood, Mo., had to shoot a 268 over the National Match Course to win the pistol and revolver match from F. C. Hirdler and A. Boefer of St. Louis both of whom shot 266 and took second and third places respectively.

The New Brighton (Penn.) Rifle Club held a very successful small-bore shoot on Sunday, October 14th with some of the best known riflemen of the country attending. Winners included Helen Hale, the Akron, Ohio, girl who won the Women's Championship at Camp Perry this summer; Ray Louder of Butler, former Captain of the U. S. Dewar Team, Bill Patriquin of Indiana, Pennsylvania, member of the R. W. S. Team, Pat Donohue of Youngstown, M. E. Altimus, Sam Kennedy of Patterson Heights, Leonard Field of New Brighton and many others. Donohue outdoped the wind and won the grand aggregate while only one point behind was Kennedy, followed by Pullions of East Liverpool, George Kirk of Verona and Louder.

Spencer W. Rawlins established what is believed to be a new world's record when he scored 180 points out of a possible 200 in the Sniper Special Match held September 20th by the Frankford Arsenal Rifle Club of Philadelphia. This match is shot at 200 yards and the target used having a one inch ten ring. Rawlins used a heavy barrel Springfield and telescope sights.

Fifty-five small-bore riflemen participated in the third annual small-bore tournament held at Marietta, Ohio, on August 8th and 9th. The Marietta lawn-like range has received nationwide recognition as one of the most beautiful ranges in this country.

All members of the Fort Harmer Rifle Club gave up the privilege of shooting in order that the matches might be run off in the best possible manner. This excellent range operation was particularly noticeable in the 200 yard matches when all targets were operated by club members and experienced shooters.

The Bronx Revolver Association announces that they now have three qualified U. S. Army instructors available for the instruction of new members in both rifle and pistol shooting. Messrs. T. Florich, H. Heinlein and Maurice V. Barry of the Bronx Club attended the U. S. Army Small Arms Firing School at Camp Perry, Ohio, during August, and upon completion of the course received certificates as instructors in pistol and rifle marksmanship.

At a recent meeting it was announced that Messrs. L. B. Love, M. A. Dragone, and E. M. Turner had qualified as expert pistol shots at the International Pistol Tournament held last month at Teaneck, New Jersey. Medals and qualification certificates were presented to the three men by Doctor Bonomo, President of the Association, at an informal dinner. Bonomo expressed the hope that more Bronxites would take advantage of the club to develop their shooting ability.

The Bronx Revolver Association meets every Monday and Wednesday evening at the range of the 105th Field Artillery, 166th St. and Franklin Avenue. Bronxites of good character are urged to com-

municate with the Secretary, Fred Darmstadt, 809 Melrose Avenue, for details as to membership.

The Fourth Annual North Iowa Small-Bore Rifle and Pistol Tournament sponsored by the Cerro Gordo Rifle Club of Mason City, Iowa, was confined this year to pistol and revolver matches only due to the loss of their rifle range. This year the handgun program was fired over the police range in Iowa City. Ten new local records were established this year which gives a good indication of how pistol shooting is forging ahead in the middlewest.

CORRECTION

An error was made in listing the members of the New Jersey team in the Caswell Match (Official Bulletin No. 53) at Camp Perry. This team, winners of second place with a score of 2379, was composed of Wm. P. Schweitzer, J. C. Lippencott, Jr., T. K. Samsøe, R. D. Triggs, William Larson, and Roger de Baun, with Sam Moore as coach and Ralph Coffee as team captain.

CHALLENGES

We have just received a very interesting letter from Alden McKim Crane who formerly was located at Fort Myer, Virginia, but is now in Belgium. Mr. Crane tells us that a number of his club member friends over there are very much interested in arranging small-bore postal matches with N. R. A. clubs in the United States. These matches would be shot on the 50 meter range using the International target. Any clubs interested in such matches should write Mr. Alden McKim Crane, 9 Ave., Belle Vere, Waterloo, Belgium.

Pine Bluffs, Wyoming Rifle Club wishes postal matches over 50 foot range, iron sights, 10 men to shoot with 5 high to count. Would like matches with teams shooting around 1300 score and will exchange either targets or score sheets. Address: Ralph Shipp, Secretary, Pine Bluffs, Rifle Club, Pine Bluffs, Wyoming.

IDEA FOR PISTOL CASE OWNERS

"I RECENTLY had a brainstorm which may be of interest to the brothers who own the Hartman Two-Gun case," writes G. Donald Meserve, of Hudson, Mass. Continuing, he says: "Getting fed up with the bottles of Hoppes No. 9 and gun oil bumping around in the case, I bought an ink obliterator sold in most stationery stores up here under the name of 'Carter's Inky Racer.' It contains two half-cylindrical bottles which nest in the base of the can. After draining, thoroughly rinsing and drying these bottles in the oven I put the Hoppe's in one bottle and the oil in the other and think it is an ideal way to keep those fluids in the case."

"If the bottles are allowed to remain on their sides any length of time it may be advisable to use cork stoppers instead of the glass-rubber droppers which come with the bottles as the oil may seep out. Also be careful to clean and dry the bottles thoroughly before placing the new fluid in them."

NEW CHARTERED CLUBS

Experimental Model Basin Rifle and Pistol Club, Mr. Wm. H. Norley, Secretary, 1811 Massachusetts Ave., S. E., Washington, D. C. **Amarillo Rifle Club**, Mr. W. A. Clark, Jr., Secretary, P. O. Box 1605, Amarillo, Texas. **Grove City Sportsman's Rifle Club**, Mr. C. E. Hay, Jr., Secretary, Grove City, Ohio. **Winnetka Rifle Club**, Mr. Fred Schultz, Secretary, 777 Foxdale Avenue, Winnetka, Illinois. **Fallon Rifle Club**, Mr. Roy G. Coverston, Secretary, Fallon, Nevada. **Key West Rifle and Pistol Club**, Mrs. Eva B. Warner, Secretary, 1209 Division Street, Key West, Florida. **Keystone Hunters Association**, Mr. J. B. Gates, Secretary, Cresson, Pennsylvania. **Lore City Rifle and Pistol Club**, Mr. Homer Gallo-way, Secretary, Lore City, Ohio. **Brinks Social Club**, Mr. T. Bergenson, Secretary, 1414 Sedwick Street, Chicago, Illinois. **Red Devil Rifle and Pistol Club**, Mr. Clarke M. Lucas, Secretary, Devil's Slide, Utah. **Albert Lea Rifle and Pistol Club**, Mr. H. F. Flohr, Secretary, 108 Adams Avenue, Albert Lea, Minnesota. **San Diego Police Revolver Club**, Mr. R. S. Pease, Secretary, 2203 Howard Street, San Diego, California.

American Legion Rifle and Pistol Club, Mr. John Doughman, Jr., Secretary, 312 E. Columbus Street, Kenton, Ohio. **Smith County Rifle and Pistol Club**, Mr. D. V. Firewood, Secretary, Smith Center, Kansas. **Oneida Rifle Club**, Mr. Burtis I. Frederick, Secretary, 191 Madison Street, Oneida, New York. **Clearfield Creek Rifle Club**, Mr. Earl Halverson, Secretary, Glen Richey, Pennsylvania. **The Great Falls Sportsman's Club**, Mr. George N. Earle, Secretary, 18 Cove Court, Rochester, New Hampshire. **Oster-ville Gun Club, Inc.**, Mr. H. M. Crosby, Jr., Secretary, Osterville, Massachusetts. **Nephi American Legion Rifle Club**, Mr. Parks H. Anderson, Nehli, Utah. **Raritan Post No. 23 American Legion Rifle Club**, Mr. A. W. McFarland, Secretary, 123 Maple Place, Keyport, New Jersey. **St. Thomas Military Academy Rifle Club**, Mr. C. Richard Lill, Secretary, 3404 Holmes Avenue, Minneapolis, Minnesota. **Manual Arts High School Girls Rifle Club**, Miss June Chubb, Secretary, 1106 W. 49th Street, Los Angeles, California. **Barnes City Rifle Club**, Mr. Harold Carson, Secretary, Barnes City, Iowa. **Clarendon Rifle and Pistol Club**, Mr. Keith Stegall, Secretary, Clarendon, Texas.

Clinton Rifle and Pistol Club, Mr. E. G. Groeschick, Secretary, 309 South 7th Street, Clinton, Oklahoma. **Langell Valley Gun Club**, Mr. Owen Pepple, Secretary, Rt. #1, Bonanza, Oregon. **Capital Rifle and Pistol Club**, Mr. Charles Hurd, Secretary, 21 Loomis Street, Montpelier, Vermont. **Nehi Rifle Club of Culpeper**, Mr. William D. Cannon, Secretary, Culpeper, Virginia. **Cedar Rapids Rifle and Pistol Club**, Mr. David S. Thomas, Secretary, 325 1/2 Second Ave. E., Cedar Rapids, Iowa. **Flag-staff Rifle and Pistol Club**, Mr. Elmer A. Hubbard, Secretary, Flagstaff, Arizona. **Ogema Rifle Club**, Mr. Leonard Kishberg, Secretary, Ogema, Wisconsin. **Adrian Rifle and Revolver Club**, Mr. Thomas C. Ingersoll, Secretary, Adrian, Michigan. **Wadena Rifle and Pistol Club**, Mr. R. L. Fossen, Secretary, Wadena, Minnesota. **Isaac Walton League Rifle and Pistol Club**, Mr. J. C. Zimmerman, Secretary, R. #24, Terre Haute, Indiana. **Bradford American Legion Post #109 Rifle Club**, Mr. H. J. Murphy, Secretary, 28 Lorana Avenue, Bradford, Pennsylvania. **Ventnor City Police Revolver Club**, Mr. Lemuel Bull, Secretary, 126 N. Wissabickon Avenue, Ventnor City, New Jersey. **Tintic American Legion Rifle Club**, Mr. V. G. Pett, Secretary, Eureka, Utah. **Oakland Scottish Rifle Pistol and Rifle Club**, Mr. C. R. Ohlson, Secretary, 1550 5th Street, Alameda, California. **Dayton Power & Light Rifle Club**, Mr. Hugh Perrill, Secretary, c/o Dayton Power & Light Rifle Club, Washington C. H., Ohio. **Hyattsville Rifle Club**, Mr. Carl Walz, Secretary, 121 Baker Street, Colmar Manor, Brentwood, Maryland. **North St. Louis Revolver and Rifle Club**, Mr. Carl Colligan, Secretary, 3340 Oakdale, Pine Lawn, Missouri. **Los Banos Rifle and Revolver Club**, Mr. Jesse F. Cline, Secretary, P. O. Box 356, Los Banos, California. **Shire Oaks Y. M. C. A. Sportsman's Association**, Mr. E. A. Harris, Secretary, 600 4th Street, Elrama, Pennsylvania.

Firestone Rifle and Pistol Club, Mr. William Carl Thompson, Secretary, R. #22, Medina, Ohio. **Schoharie County Rifle Club**, Mr. Leland S. Jones, Secretary, Cobleskill, New York. **Newark Rifle and Pistol Club**, Mr. David Sproul, Secretary, 86 Wright Street, Newark, New Jersey. **Oxford Rifle Club**, Mr. Gilbert R. Kelly, Secretary, Oxford, Pennsylvania. **Big Thunder Rifle Club**, Mr. Albert F. Wheeler, Secretary, 1438 South State Street, Belvidere, Illinois. **Kimberly Clark Rifle and Pistol Club**, Mr. W. C. Gall, Secretary, 1350 Niagara Avenue, Niagara Falls, New York. **McDonald Rifle Club**, Mr. R. A. Helwig, Secretary, McDonald, Ohio. **Salt Lake American Legion Post #22 Rifle and Pistol Club**, Mr. Elmer B. Bosen, Secretary, 618 Ninth Avenue, Salt Lake City, Utah. **Brown University Rifle Club**, Mr. Thomas B. Peckham, Secretary, 95 Cole Avenue, Providence, Rhode Island. **The Bountown Consolidated Sportsmen Rifle Club**,

Mr. John Redington, Secretary, 324 Cornelia Street, Bountown, New Jersey. **Luverne Rifle and Pistol Club**, Mr. E. L. Selander, Secretary, P. O. Box 385, Luverne, Minnesota. **Sixty Ninth Regiment Rifle Club**, Mr. Henry W. Schaefer, Secretary, 231-14 Montrose Street, Long Island, New York. **The Niantic Rifle and Revolver Club**, Mr. Frank W. Rogers, Secretary, Smith Street, Niantic, Connecticut. **Onised Rifle and Pistol Club**, Mr. Sumner J. Nisson, Secretary, 390 Oriente Street, San Francisco, California. **Syracuse National Guard Rifle Club**, Frank E. Alvaro, Secretary, 321 Butternut Street, Syracuse, New York. **American Legion Post #11 Rifle and Pistol Club**, Mr. Royal I. Clinger, Secretary, 1904 N. 13th Street, Lafayette, Indiana.

Chagrin Falls Rifle & Pistol Club, Mr. Homer A. Foster, Secretary, 50 N. Washington Street, Chagrin Falls, Ohio. **Donnellson Rifle and Pistol Club**, Mr. P. E. Krehbiel, Secretary, Donnellson, Iowa. **The Royal Rifle and Pistol Club**, Mr. Jos. M. Strazis, Secretary, 930 W. 34th Place, Chicago, Illinois. **New Salem Rifle and Pistol Club**, Mr. William Conitz, Secretary, New Salem, North Dakota. **Henefer Rifle Club**, Mr. Fred Foster, Secretary, Henefer, Utah. **Cadillac Rifle and Revolver Club**, Mr. H. Ford, Secretary, 257 S. Algonquin, Detroit, Michigan. **Lenape Rifle and Pistol Club**, Mr. Gustave A. Valerius, Jr., Secretary, 249 High Street, Sellersville, Pennsylvania. **Long Valley Rifemen's Club**, Mr. Monte C. Smith, Jr., Secretary, Long Valley, Box F, Bishop, California. **Orange Y Rifle Club**, Major Mark E. M. Gwilliam, Secretary, 8 Westcott Street, Bloomfield, New Jersey. **The Air College Rifle and Pistol Club**, Mr. Gordon A. Nesbitt, Secretary, Parks Air College, East St. Louis, Illinois. **New Hampshire State Rifle Association**, Mr. A. G. Stevens, Secretary, 46 Manchester Street, Manchester, New Hampshire. **William-Goodwin Rifle and Pistol Club**, Mr. M. W. Bartlett, Secretary, East Sibago, Maine. **Oroville Rifle Club**, 100%, Mr. Fred E. Lucas, Secretary, Oroville, Washington.

Georgetown Preparatory School Junior Rifle Club, Reverend E. B. Berry, Instructor, Georgetown Preparatory School, Garrett Park, Maryland. **Detroit Lakes Junior Rifle Club**, Mr. Charles L. Wendel, Instructor, Detroit Lakes, Minnesota. **General Motors Junior Rifle Club**, Mr. Charles E. Davis, Instructor, R. F. D. #1, Pontiac, Michigan. **Catonville Junior Rifle Club**, Mr. Grattan K. Tyrell, Instructor, Altamont Avenue, Catonsville, Maryland. **General Motors Junior Rifle Club**, Mr. Charles E. Davis, Instructor, R. F. D. #1, Pontiac, Michigan. **Central High School Rifle Club**, Mr. Everett M. Ferris, Instructor, 514 W. Castle Street, Syracuse, New York. **West Paris High School Junior Rifle Club**, Mr. Dwight L. Libby, Instructor, West Paris, Maine. **New Cumberland Boy Scout Rifle Club**, Mr. S. Paul Baker, Instructor, 413 Bridge Street, New Cumberland, Pennsylvania. **Mount Lebanon Junior Rifle Club**, Rifleman Richard R. Miller, Secretary, New Lebanon, New York. **Valley City High School Rifle Club**, Mr. Howard Vetsen, Instructor, Valley City, North Dakota. **Douglas High School Rifle Club**, Mr. Paul Poitz, Instructor, Box 1085, Douglas, Arizona. **Southwest Rifle Club**, Lt. Eliche and Major Castle, Instructors, 1833 Linda Rosa Avenue, Eagle Rock, California. **Playgrounds Junior Rifle Club**, Mr. Raymond Saver, Instructor, 890 Rice Street, St. Paul, Minnesota. **Camp Merritt, Big Blue Lake, Michigan**, Mr. E. H. Tryon, Director, Muskegon Savings Bank Building, Muskegon, Michigan. **Cold Creek Camp for Boys**, Mr. C. B. Stambaugh, Jr., Director, Camp Richardson P. O., Lake Tahoe, California. **Camp Echo Hill**, Mr. Robert G. Lechner, Director, c/o Hun School, Princeton, New Jersey. **Bound Brook High School Rifle Club**, Mr. Eugene Hellwig, Instructor, 48 West Union Avenue, Bound Brook, New Jersey. **Rifettes Rifle Club**, Mrs. Harold Drake, Instructor, 644 Downing Street, Denver, Colorado. **Winifred High School Rifle Club**, Mr. W. F. Truckner, Instructor, Winifred, Montana. **Galileo Rifle Club**, Mr. O. T. Forman, Instructor, 156 Palm Street, San Francisco, California.

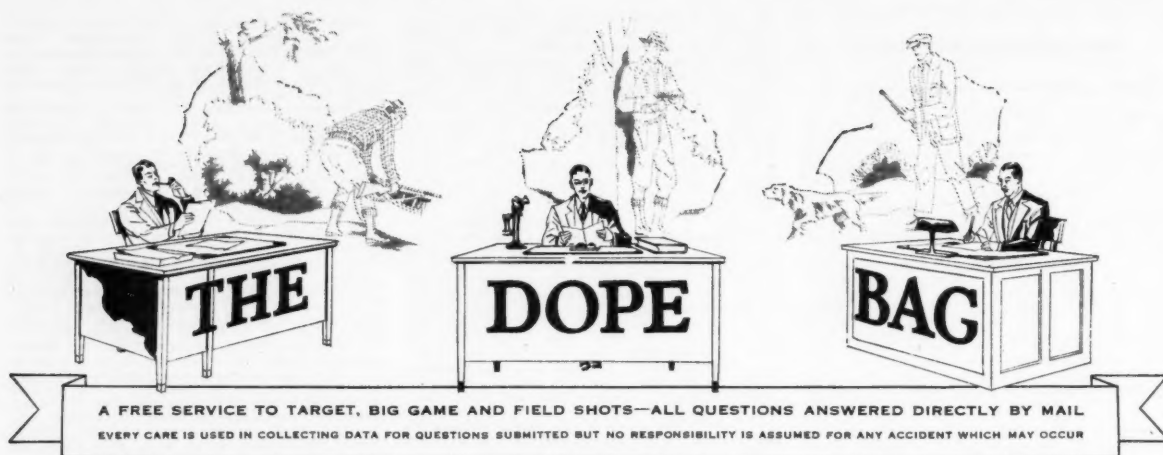
San Marcos Rifle Club, Mr. Max C. Smith, Secretary, San Marcos, Texas. **Redfield Rifle and Pistol Club**, Mr. A. L. Hoff, Secretary, Redfield, Iowa. **Highland Pistol and Rifle Club, Inc.**, Mr. M. Herbst, Secretary, Highland, Illinois. **Air Station Rifle and Pistol Club**, Mr. Philip A. Penston, Secretary, 628 Washington Street, Cape May, New Jersey. **Point Rod and Gun Association**, Mr. David Bender, Secretary, 35 Arden Street, New York City, New York. **Long Island Gun Club**, Mr. Edward A. Lindell, Secretary, 83-49 163rd Street, Jamaica, Long Island, New York. **Hesperus Club**, Mr. Robert J. Frazier, Secretary, 10 Marchant Street, Gloucester, Massachusetts. **West Lafayette Rifle Club**, Mr. Herbert G. Davis, Secretary, Plainfield, Ohio. **Beckley Rifle and Pistol Club**, Mr. H. O. Arnott, Secretary, Beckley, West Virginia. **Gulf Rifle Club**, Mr. T. S. McElrath, Secretary, Sophia, West Virginia. **Centinel Springs Revolver Association**, Mr. R. E. Evans, Secretary, 10606 Freeman Avenue, Inglewood, California. **Newington Rifle and Revolver Club**, Mr. Arthur B. Yeager, Secretary, 90 Stoddard Avenue, Newington, Connecticut. **Chicago Pneumatic Gun Club**, Mr. Cleon L. Douglas, Secretary, 229 Wiley Avenue, Franklin,

Junior Rifle Club, Mr. R. H. Brubaker, Instructor, R. D. No. 1, Ephrata, Pennsylvania. **Canby High School Rifle Club**, Mr. Clinton Thurlow, Instructor, 17 Stone Street, Augusta, Maine. **Mesa Junior Rifle Club**, Mr. Paul McKinley, Instructor, Mesa, Colorado.

Chickasaw Rifle Club, Mr. Claude S. Capers, Secretary, 2203 Union Avenue, Memphis, Tennessee. **Philadelphia & Reading Car & Iron Co. Pistol & Rifle Club**, Mr. Albert Culver, Secretary, 624 E. Centre Street, Mahanoy City, Pennsylvania. **York Pistol Club**, Mr. Clay Shannon, Secretary, 33 E. Philadelphia Street, York, Pennsylvania. **Tulare Rifle Association**, Mr. E. Johnson, Secretary, 710 East Ventura, Tulare, California. **Strandquist Rifle Club**, Mr. H. E. Sjoquist, Secretary, Strandquist, Minnesota. **Tuna Valley Rifle Club**, Mr. E. W. Hoover, Secretary, 21 Webster Street, Bradford, Pennsylvania. **Ariel Rifle and Pistol Club**, Mr. F. M. Neil, Secretary, Ariel, Washington. **Grand Junction Rifle Club**, Mr. W. W. Lilliston, Secretary, 929 No. 9th Street, Grand Junction, Colorado. **Stockton Pistol Club**, Mr. Robert W. Schaeneman, Secretary, 820 N. Monroe Street, Stockton, California. **Butternut Rifle Club**, Mr. Alfred Elm, Secretary, Butternut, Wisconsin. **University of Virginia Rifle Club**, Mr. L. H. Breerton, Jr., Secretary, 1212 Wertland Street, Charlottesville, Virginia. Co. "F" 132nd Inf. **Rifle and Pistol Club**, Mr. George M. Bergeron, Secretary, 2543 Sunnyside Avenue, Chicago, Illinois. **South High School R. O. T. C. Rifle Club**, Mr. Robert Haines, Secretary, 2201 South Fillmore Street, Denver, Colorado. **Metropolitan Rod and Gun Club, Inc.**, Mr. Charles E. Haggerty, Secretary, 1510 East 33rd Street, Brooklyn, New York.

El Paso Customs Service Pistol & Rifle Club, Mr. Phillip J. Bourk, Secretary, 1524 Upon Avenue, El Paso, Texas. **Warrenton Rifle and Pistol Club**, Mr. Chester Weaver, Secretary, Warrenton, Oregon. **Netop Rifle Club**, Mr. Arthur W. Manchester, Secretary, 13 Kay Street, Newport, Rhode Island. **Ecco Rifle and Pistol Club**, Mr. A. L. Halverson, Secretary, 2307 N. W. Hoyt Street, Portland, Oregon. **Duluth Chapter Order of DeMolay Rifle Club**, Mr. Ralph Singleton, Secretary, 2872 Wicklow Street, Duluth, Minnesota. **American Legion Rifle Club of Elko County**, Mr. F. W. Egelston, Secretary, Box 297, Elko, Nevada. **Seminole Rifle and Pistol Club**, Mr. P. V. Humphries, Secretary, Box 822, Seminole, Oklahoma. **Manuskwa Valley Conservation & Rifle Club**, Mr. Wm. J. Bouwens, Secretary, Palmer, Alaska. **Grand Haven Rifle and Pistol Club**, Mr. Vernon Conant, Secretary, 613 Sheldon Road, Grand Haven, Michigan. **Shelby Junior Rifle Club**, Mr. Ralph W. Sletor, Instructor, Box 134, Shelby, Montana. **Annie Oakley Junior Rifle Club**, Mr. L. C. Brandt, Instructor, Cleveland, Oklahoma. **California Preparatory School Rifle Club**, Mr. Carl R. White, Instructor, California Preparatory School, Covina, California. **Winnemucca High School Rifle Club**, Mr. M. E. Morrison, Instructor, Winnemucca, Nevada. **Y. M. C. A. Junior Rifle Club**, Mr. Robert Davis, Instructor, 621 W. Capitol, Springfield, Illinois. **Amboy Junior Rifle Club**, Mr. J. M. Bennett, Instructor, R. F. D. No. 1, Conneaut, Ohio. **Mount Hermon Junior Rifle Club**, Mr. Orvil E. Mirtz, Instructor, Mt. Hermon, Massachusetts. **Laray Junior Rifle Club**, Mr. W. H. Brightwell, Instructor, Luray, Missouri. **Sherwood Hall Junior Rifle Club**, Mr. Arthur C. McWhinnie, Instructor, Laramie, Wyoming. **Webb School Rifle Club**, Mr. H. C. Milligan, Instructor, care Webb School, Bell Buckle, Tennessee. **Y. M. C. A. Rifle Club**, Mr. C. E. Drake, Secretary, Y. M. C. A., Tacoma, Washington.

Chicago Pneumatic Gun Club, Mr. Cleon L. Douglas, Secretary, 229 Wiley Avenue, Franklin, Pennsylvania. **Brooke County Rifle Association**, Mr. Edgar R. Minnich, Secretary, Wellsburg, West Virginia. **Lincoln Park Gun Club**, Mr. W. V. Wilson, Secretary, 1469 Garfield Street, Lincoln Park, Michigan. **Lawndale-Crawford Gun Club**, Mr. John Alfirevic, Secretary, 2718 So. Lawndale Avenue, Chicago, Illinois. **Edgewater Gun Club**, Mr. Alex N. Aster, Secretary, P. O. Box 5435, Chicago, Illinois. **Santa Barbara County Chapter of the Isank Walton League**, Mr. James W. Bucklin, Secretary, Las Palmas Drive, Santa Barbara, California. **Louis E. Davis Post No. 56 Rifle and Pistol Club**, Mr. George Kneller, Secretary, 2133 1/2 East Jefferson Street, Bloomington, Illinois. **Carlsbad Rifle Club**, Mr. J. E. Nabors, Secretary, Carlsbad, New Mexico. **West Palm Beach Police Rifle Club**, Mr. Chas. H. Wentworth, Secretary, 501 12th Street, West Palm Beach, California. **Pine Tree Fish and Game Protective Association Rifle Club**, Mr. Ray N. Libby, Secretary, 34 Savoy Street, Portland, Maine. **Canby Rifle Club**, Mr. Rodney M. Pitts, Secretary, Canby, Oregon. **Lafayette Veterans Rifle Club**, Mr. G. D. Blakeslee, Secretary, R. D. No. 1, Lewis Run, Pennsylvania. **Valley View Rifle Club**, Mr. Louis Mattison, Secretary, 356 East 2nd Street, South, Logan, Utah. **Quincy Y. M. C. A. Rifle Club**, Mr. W. Raymond Bates, Secretary, 125 1/2 North 9th Street, Quincy, Illinois. **Viley Rifle and Pistol Club**, Mr. Charles Davidson, 129 West Short Street, Lexington, Kentucky. **American Legion Post No. 228 Rifle & Pistol Club**, Mr. Clyde B. Saylor, Secretary, 2515 Eighth Avenue, Altoona, Pennsylvania. **Joliet Police Rifle and Pistol Club**, Mr. M. J. Hebert, Secretary, 201 Seaser Street, Joliet, Illinois.



Conducted by F. C. Ness

Two Extremes for Deer Hunters

ON THE verge of the deer season this year we have a choice of two diametrically opposed calibers which are so utterly different that they both very probably represent the ultimate in their respective classes at the extreme ends of the two opposites. Shall we choose a big, heavy bullet at low velocity or a small, light bullet at high velocity? This fall we have the choice of the smallest and swiftest or the biggest slow bullet. I am, of course, referring to the .220 Swift and the 12 gauge smoothbore.

In the former we have a sharp .22-caliber 54-grain jacketed bullet at nearly 4000 f.-s. against a blunt .70-caliber, 400-grain solid bullet at nearly 1500 f.-s. in the latter. One is three times the size and eight times the weight of the other, but the latter has three times the velocity and spin as its qualifications for killing. Early experiments have indicated that both are effective on deer at 100 yards, where one has a remaining velocity of 1100 f.-s. and the other one of 3300 f.-s.

Dope On Deer-Killing Wanted

I hope to try one or both on deer this fall and I know many of our members will have similar opportunities for investigation of the effectiveness of such loads on such game. We want to know whether they are satisfactory and humane or ineffective and unsportsmanlike so that we can accurately inform and advise other members and sportsmen in general. For that purpose we shall need a number of unbiased reports including those on hits which failed to kill as well as those which proved satisfactory. Already we have been promised such dope by a number of our friends. When a sufficient number of

reliable reports has been received the results will be tabulated and published in the Dope Bag for the benefit of all readers. Let us have the dope if you have occasion to shoot deer or similar game during the 1936 season, especially if you use the .220 Swift, .22-4000, .224 Lightning or similar loads.

No lengthy time-taking reports are needed or wanted. Simply and briefly list conditions and results along the following plan: 1. Range. 2. Direction in which game was facing. 3. Where the bullet struck. 4. What the animal did when struck. 5. Brief description of the wound. 6. How, in case of failures, the bullet failed. 7. Name the standard cartridge used or give load details. That is all.

The Winchester Rifled Slug

In those states which require the use of the shotgun in deer slaying we consider the single-ball "punkin" loads much more sportsmanlike than the inhumane buck-shot loads. Such round ball loads are effective for reliable hitting of deer at forty yards in the smooth bore. Now that Winchester has developed the Foster rifled slug the effective range is easily doubled, as hits at eighty yards may now be expected and not considered lucky. These heavy blunt-nose slugs have diagonal grooves

and ribs so that they are made to fit the bore for indiscriminate use in full-choke or cylinder-bore barrels. The propulsion gas of the powder directed against the sides of these diagonal ribs and their continuous directional contact with the bore turns the bullet on its axis in the barrel and imparts to it a spinning motion in flight which keeps it head-on and true.

Brenneke Bullets and Loads

What has been written about the Winchester round-nose slugs is also true of the square-shoulder Brenneke bullets as imported by and obtained from A. F. Stoeger, Inc., either as components for handloading or ready loaded in shotgun cases. The cylindrical Brenneke bullets also have the diagonal grooves for spinning the bullet under gas pressure in the bore and for adapting them to a universal snug fit in all bores and chokes of the same gauge as the bullet. The Brenneke bullet has a thick felt wad secured by a screw to its base for a gas seal and to help keep it true in flight. This wad is intended to be seated directly on top of the powder charge.

We obtained the best smooth-bore accuracy (which was $2\frac{5}{8}$ inches, measured center to center, at 50 yards) when we substituted 12-gauge Brenneke bullets for the shot charge in Western Expert loads. The Germans use a special powder, designed especially for slug loads and unsuitable for shot loads, with which they give the Brenneke bullets normal velocities at remarkably low pressures and also good accuracy. I believe this special slug-powder should be stipulated when ordering Brenneke loads in order to ensure getting low pressures and satisfactory ac-

Mr. Ness, Dope Bag editor, will be away from the office on hunting trips, beginning early in November. During this month and a part of December there will be some delay in replying to any letters which require his attention.

CHARTS

Accompanying Article

**"GRAPHIC CHARTS FOR SMALL-
ARM BALLISTIC COMPUTATIONS"**

by

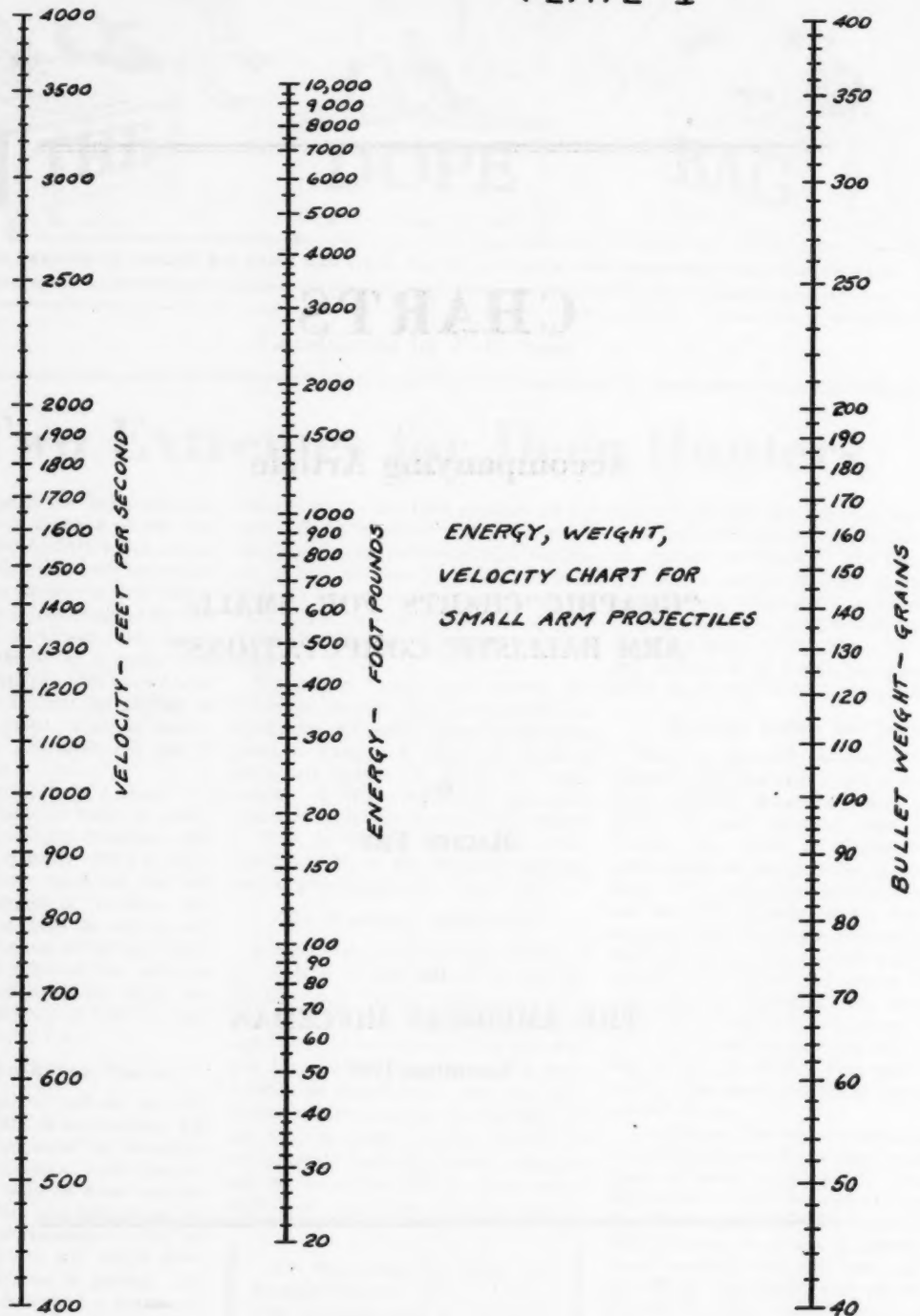
MACON FRY

in

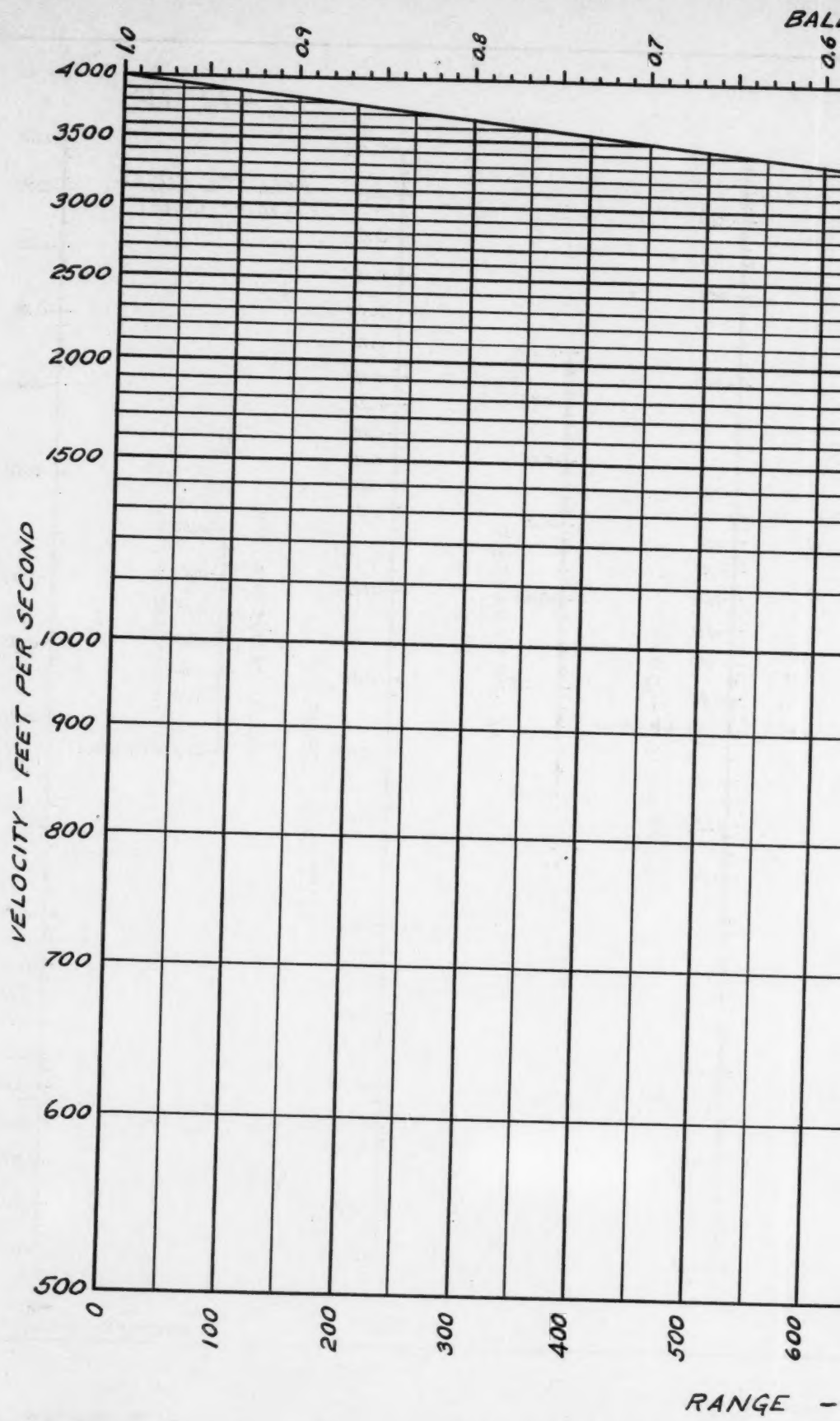
THE AMERICAN RIFLEMAN

November, 1936

PLATE I



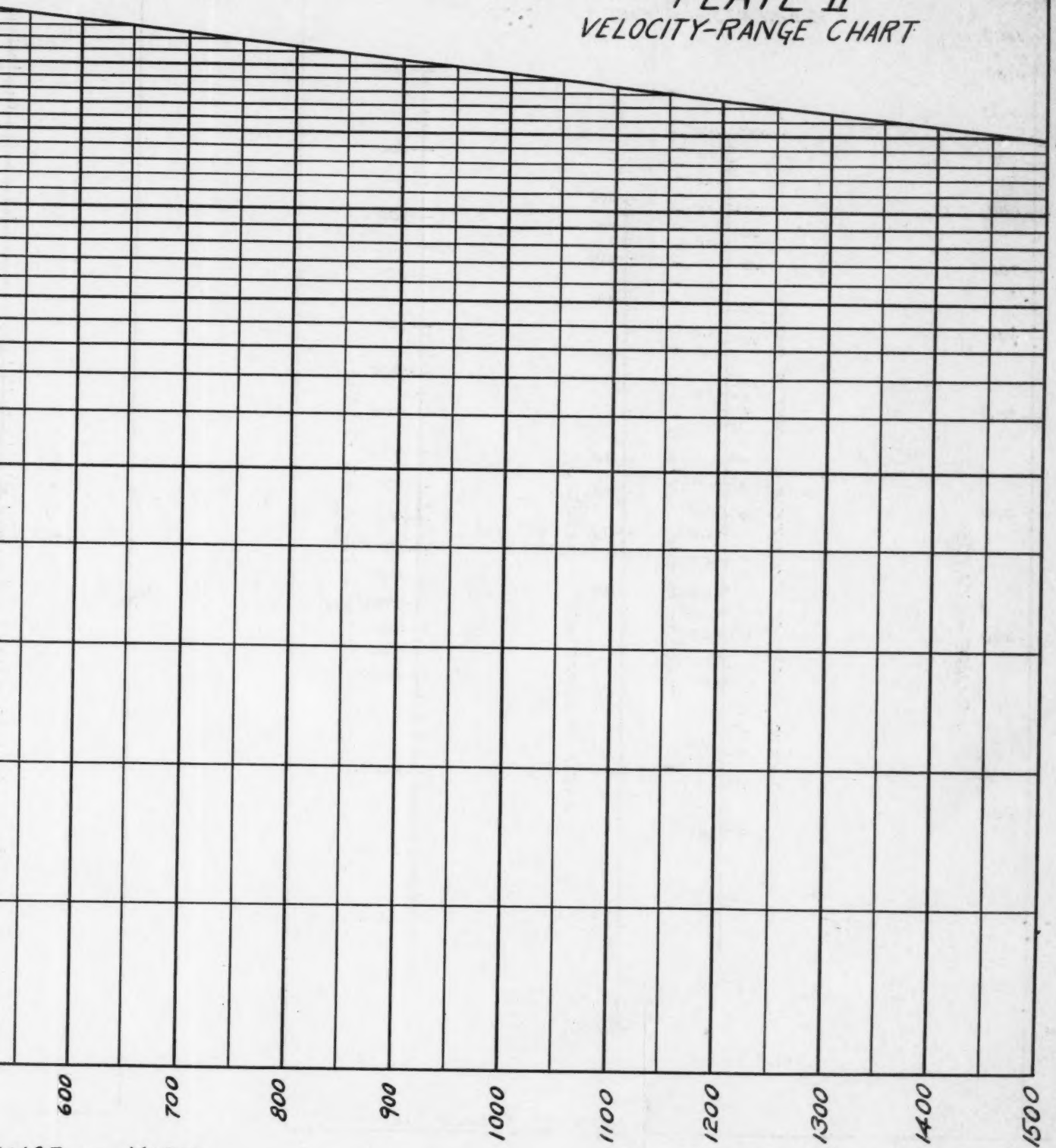
MACON FRY, 28 JULY 1936



BALLISTIC COEFFICIENT

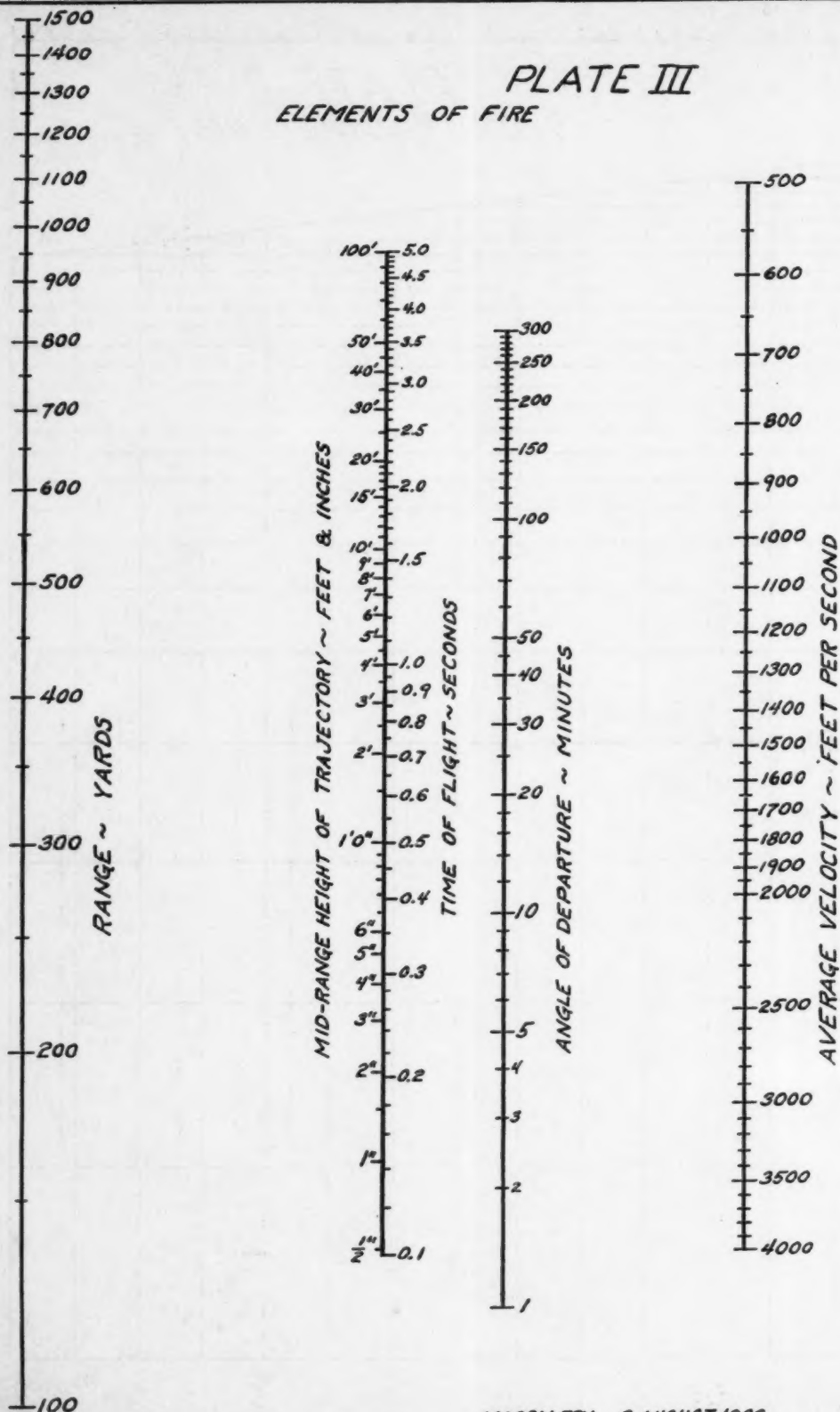
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PLATE II
VELOCITY-RANGE CHART



RANGE - YARDS

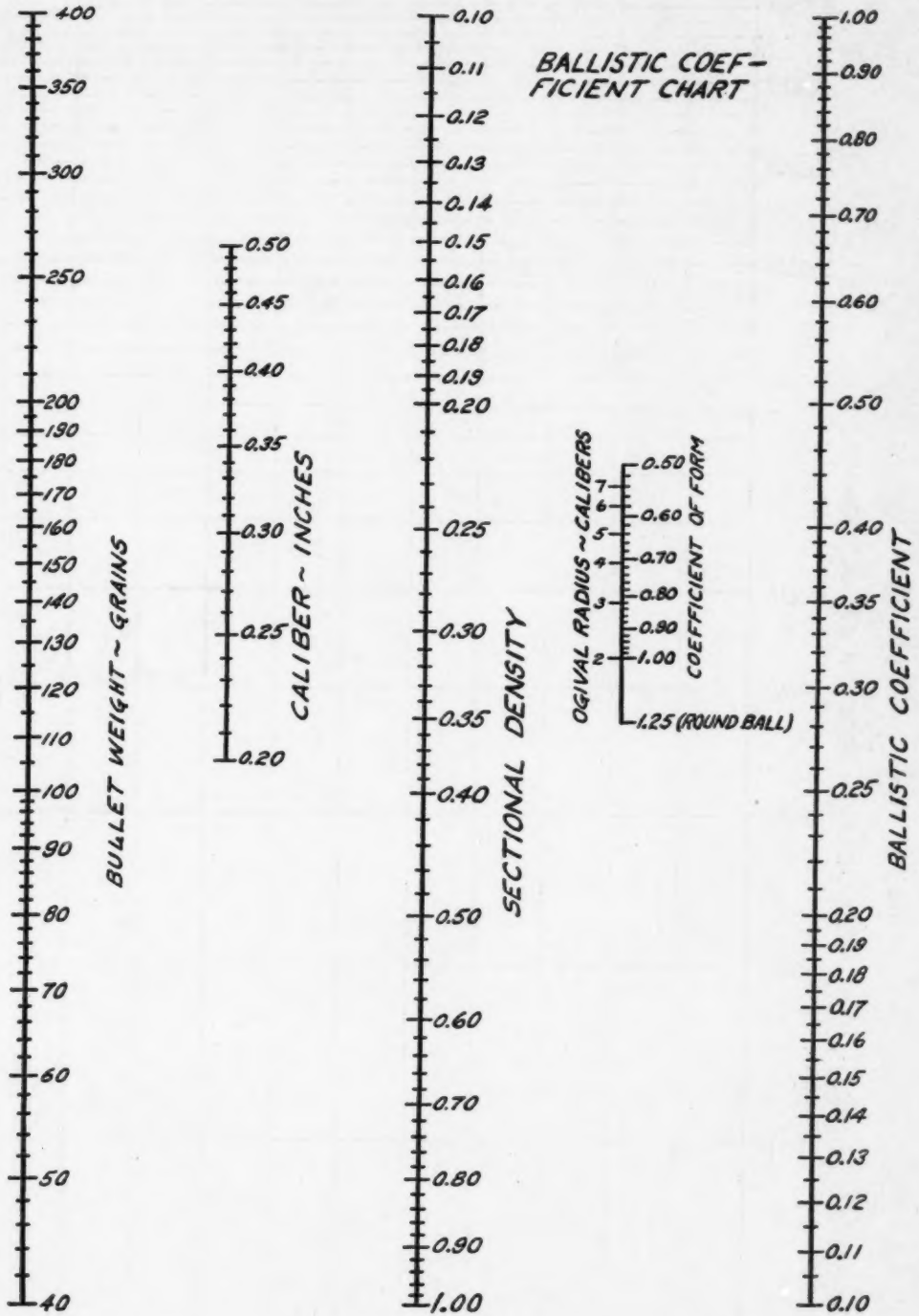
PLATE III ELEMENTS OF FIRE

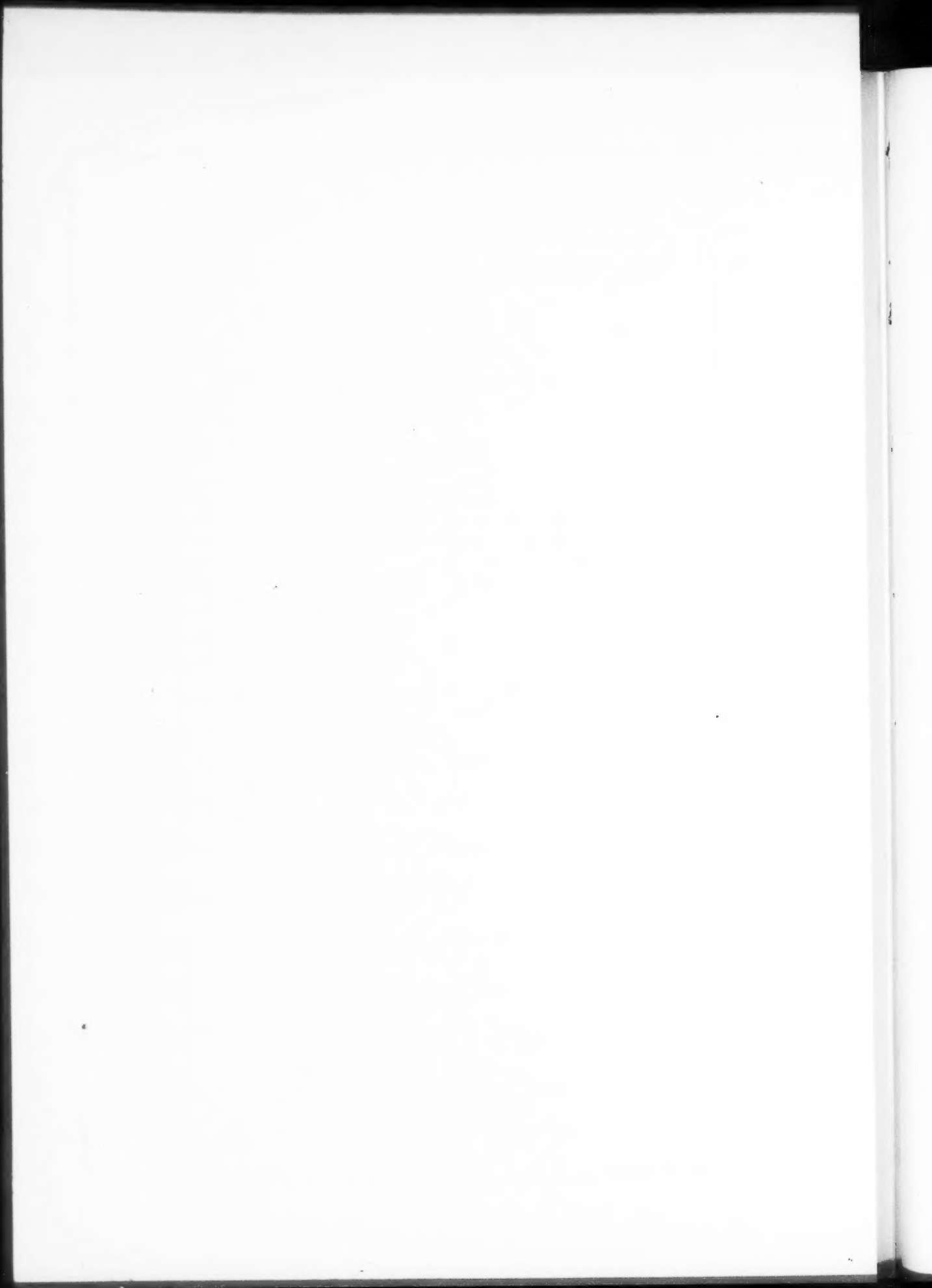


MACON FRY, 9 AUGUST 1936

PLATE IV

BALLISTIC COEFFICIENT CHART





curacy. The worst results we obtained with Brenneke bullets was with American factory-loaded cartridges and we blame the excessive resizing or deforming of the bullet which was done on account of the thicker paper of American shotgun cases. Some of the German-loaded Brenneke bullets may be too large for our tightest chokes, and such large-diameter bullets should be confined to modified chokes, $\frac{3}{4}$ chokes or to non-excessive full chokes (not smaller than .695-inch) in any light or comparatively weak barrel.

Comparative Ballistics

The paper energy of the modern 12-gauge, ounce slug is about 2000 ft.-lbs. and that of the .22-4000, 54-grain bullet is practically the same. Both of these energy ratings are misleading, however, and about worthless as a criterion for evaluating killing effectiveness. Momentum from weight counts far more than velocity in the case of the big slug, and this our formula fails to recognize. Paper energy would place it on par with the .30-30 Winchester, while in effective momentum the 170-grain bullet ranks only 57 against a relative 86 for the 400-grain slug.

Likewise, squaring the velocity fails to do full justice to the killing or shocking qualities of our small light bullet at 4000 f.-s. Let it remain intact and pass entirely through our game without disintegrating and still it effectively imparts a killing shock which our paper formula utterly fails to recognize. The remaining or striking velocity is what counts, and this the properly designed .22-caliber bullet has in large measure out where the game is, at 200 or 300 yards.

A New Ballistics Formula

Take the W. & S. 54-grain bullet at its best with 3000 f.-s. remaining velocity at 300 yards. Cube that striking velocity, multiply by the bullet weight and divide by a billion (or point off nine places) and you will have a much more accurate conception of its killing power. That would figure .216 at 300 yards against .720 for the best modern .300 Magnum load at only 300 feet. Because only actual striking velocities of at least 2700 f.-s. can be justifiably computed and fairly compared by this formula we would have to consider the modern .30-'06 173-grain or 180-grain bullets only at the muzzle where they would rate a relative killing power of .700, approximately. In direct comparison, at the muzzle, the .22-4000 bullet would have a relative killing power of about .500.

The noted Lieutenant-Colonel of the Engineer Corps who is responsible for this more-accurate formula for computing killing power at high velocity explains the relative effect of the small 56S Swift bullet by saying it develops 1200 horse power at 300 yards against 700 horse

power for the .250-Savage 87-grain bullet. The comparison examples which I have given above are merely for better appreciation. In fact they are more or less hypothetical and impractical, because we cannot practically achieve sufficiently high striking velocities at game-shooting ranges of 300 yards with any .30-caliber rifle or cartridge.

Our nearest practical approach to an equivalent basis for fair comparison is offered by such cartridges as the .300 Magnum at 3100 f.-s. m.v., the .244 and .280 Halger Magnum, the .280 Dubiel Magnum and other similar high-velocity loads, provided that long, pointed bullets are used.

In truth, even the commercial .220 Swift bullets just reach this new field of ballistics which is still in the process of development. Amazing things have already been accomplished for which we are largely indebted to that enthusiastic explorer, Captain G. L. Wotkins. A long pointed bullet with a 10-caliber head-radius is required for the ultimate in exterior ballistics. Such a long slender bullet requires a quicker twist of rifling than 1-16, 1-14 or even than 1-12 for gyroscopic stability over long ranges. A twist of one turn in ten inches and a velocity of 4000 f.-s. or more calls for a solid bullet to forestall slugging, forcement or deformation, especially when the .22-caliber projectile is nearly an inch long. Such a bullet in such a load and barrel is accurate at long range. It will penetrate and has penetrated $\frac{1}{4}$ -inch of cold rolled steel (tensile strength, 66,000 lbs.) at (900 ft.) 300 yards.

This emphasizes the value and importance of the new killing-power formula, because these solid bullets or other tough bullets which strike at high velocity seem to kill as well when they perforate straight through both sides of such game as deer. It is in effect a paralyzing shock caused by a high rate of bullet spin and a sudden radial displacement of tissues and nerves; a terrific shock imparted suddenly, that is over an exceedingly short interval or duration for complete perforation. Such action and reaction attending an ultra-high striking velocity makes the diameter, weight and paper energy of the bullet of little importance after it lands.

The double-jacket, W. & S., 56-grain soft-point bullet with $8\frac{1}{2}$ -caliber head has on occasion with one shot killed two coyotes at 300 yards and two pelicans at 200 yards, which indicates the bullet is not prone to break up on striking and that disintegration is not necessary for reliable killing. Reports following the early deer season along the Pacific Coast reveal the fact that many deer were perforated and anchored by this bullet without disintegration. Many times we have heard of chucks being killed by mere neck or chin burns caused by the close passage of reg-

ular .220 Swift and .22-4000 Sedgley bullets, an effect of radiating energy without striking which can be ascribed only to a very high remaining velocity.

Since we do not need bullet expansion at these new "gosh-awful" striking velocities I rather like the idea of solid bullets. The French 8-mm. Lebel bullet was made of solid gilding metal and the small diameter of the .22 would be much more favorable. A solid bronze bullet, with very little bore friction, no jacket walls and core to cause unevenness, no lack of uniformity in mass or density and no problem of concentricity or center of gravity with which to contend! What a promising idea; and to realize it is already well under way! Another feather for Grove's hat. Early this year I knew about the recrudescence of that old idea but preferred to wait until it had mellowed by several months of continued experiments. Next year it well may be ripe.

New .220 Swift Handloads

J. B. Smith has corralled a large supply of uniform bullets for his custom loads in the .220 Swift. We have a supply of them and have used them in the standard Winchester rifle. Smith uses 39 grains No. 4064 and an overall of 2.725 inches for used rifles (such as our own) which have slightly eroded throats. These pointed bullets have a straight cylindrical part projecting well beyond the case mouth. They have a small exposed tip of lead, a shallow, radial hollow base and they weigh just over 54 grains. The diameter is .2235 inch and the length, .70 inch.

We seated them in Western fired cases to an overall length of 2.725 inches. We loaded them variously: with 39 grains No. 4064 and a thin graphite wad; with 39.5 and 40.0 grains powder and with only the hollow base filled with the graphite lubricant; and with 40.5 grains powder without any lubricant. At 200 yards, 35 of these mixed loads averaged 2.30 inches per group, and all 40 shots fired averaged 3.15 inches per group. At that, with two of us dividing the firing, we both called at least one poorly held shot in each five shots. Those groups should have been only $\frac{1}{2}$ the sizes give above.

The entire afternoon's shooting with the .220 Swift at 200 yards with all bullets and loads included 16 groups and the average size for all was 3.16 inches per group. The best 5-shot groups ranged from 1.80 to 2.98 inches, center to center. We doubled these groups in pairs to get the 10-shot averages for each load. Our best 10-shot average with the new 54-grain bullet was 2.82 inches. Two light-bullet factory loads averaged 2.87 and 2.94 inches. A Smith custom load with a 55-grain bullet averaged 2.95 inches. Another 56-grain handload in new factory

cases given to us by a fellow chuck hunter averaged 3.56 inches. Our own handload with a .224-inch, 56-grain bullet and a graphite wad stored purposely for several weeks gave the poorest result, which was 4.03 inches. Still this worst load would have grouped smaller than 2 inches at 100 yards.

On Graphite Wads

Our recent publication of results of pressure tests with loads containing graphite wads was not intended to condemn the popular use of such lubricants, but rather to warn the reloader against inevitable increases in pressures attending such practice and to convince him that he must make some compensation in his load to control that higher pressure. This can be done by increasing the air space in like amount through a decrease in seating depth (should the individual rifle-throat and chamber accept a longer overall cartridge-length without forcing back the bullet) or by decreasing the powder charge, which is the same thing in effect. Conversely, when the overall and air space are increased the powder load can be slightly increased if the lubricating wad is not added to the load. When a wad is used in any safe and suitable load a part of the heat or energy of combustion is used up in consuming the lubricant and this lowers the temperature and pressure and erosive effect, but unfortunately it also reduces velocity like a cut load does.

Lee Used Smith-Sisk Loads

In the Dope Bag for September, in connection with a report on some excellent 300-yard prone shooting with the .220 Swift, I printed: "I understand T. K. Lee used W. R. A. factory ammunition." I have just been reliably informed that Mr. Lee used in that match some Smith Custom Loads. This was a load, regularly used by Lee, consisting of the 55-grain, .2225-inch Sisk bullet with 6-caliber head, Smith's graphite wad and 40 grains of I. M. R. No. 4064 powder.

MISCELLANEOUS

The Handbook and Catalog of the National Target & Supply Co. was introduced at Camp Perry. It is a big, thick book (8½ x 11 inches) of nearly 135 pages. It was compiled by Colonel Whelen, who was assisted by Colonel Hatcher and Major Askins. Thus it has authoritative treatment of its rifle, pistol and shotgun sections, respectively. The printed advice of these well-known experts is calculated to take the place of the spoken advice of inexperienced store clerks for the benefit of those who want to use it and to use the N. T. & S. time-payment plan.

While it is primarily a sporting-goods catalog for long-range time-payment consumers, the "Handbook" classification is justified by inclusion of dope on guns and shooting from the minds of the three experts mentioned above. Colonel Whelen devotes four illustrated pages to "The Rifle Sling and Its Use". He has another page on sight adjustment with a "Table of Angles of Elevation" for ten different calibers including the .22 Hornet and the 9-mm. Mauser, some of them for several weights of bullets. He also briefly discusses big-game rifles and cartridges, hunting scopes, varmint rifles, gun cleaning and target-shooting rifles and equipment. All the specific advice from the three authors is biased, but it comes from men who know.

The catalog is illustrated with manufacturers' cuts of a carefully selected line of shooting equipment. The pictures show up well on the glazed paper used and on account of a good lay-out and printing job. While experienced shooters might become disappointed in it, we consider the book worth its fifty-cent price to the layman and to anyone who wants to buy a rifle, scope, binocular, stock, shotgun, handgun or a group of accessories on the time-payment plan.

Better Loads for Better Shooting is the title of a 40-page book by duPont (6 x 9 inches) on loading the new series of duPont I.M.R. powders, which made its first appearance at Camp Perry. It is just what our hand-loading riflemen have wanted and needed since the new powders have been mentioned in print. The loading dope includes cartridge length, seating depth, bullet type and barrel length besides weight and velocity for each load.

The Improved Military Rifle powders included are: No. 4227, No. 4198, No. 3031, No. 4320 and No. 4064. The calibers included are: .22 Hornet, .22 Savage H. P., .220 Swift, .25-20 Single-Shot, .25-20 Repeater, .25 Remington, .257 Roberts, .25-35, .25-36, .250 Savage, .270 Winchester, .30 Remington, .30 Winchester, .300 Savage, .300 H. & H. Magnum, .30-'06 Springfield, .30-40 Krag, .303 Savage, .303 British, .32 Remington, .32 Winchester Special, .32 Self Loading, .32-20, .32-40, .33 Winchester, .348 Winchester, .35 Remington, .35 Winchester, .35 Whelen, .35 Self Loading, .351 Self Loading, .375 H. & H. Magnum, .38-40, .38-55, .401 Self Loading, .405 Winchester, .44-40, .45-70, .45-90, 6-mm. Navy, 6-5-mm. Mannlicher Schoenauer, 7-mm. Mauser, 7.62-mm. Russian, 7-65-mm. Mauser, 8-mm. Mauser and 9-mm. Mannlicher.

"This Handloading Game" is a 50-page book (8½ x 11 inches) offered at \$1.00 by the Outdoors Publishing Company of Chicago. It is a compilation of reprints of previously published articles by Phil Sharpe. It should be very inter-

esting to the layman if not instructive on actual loading methods. It is quite profusely illustrated by Phil's camera and the many cuts of reloading tools and gadgets together with text descriptions make it a very useful catalog of handloading equipment. We like it for this purpose.

"Passco 10 Point Grips" is the name of a pair of black composition stocks for handguns put out by the Police and Sportsmen Supply Company of Los Angeles. The ones we received were for the Officers' Model revolver but we tried them on the Camp Perry pistol. They are neat in general make-up and have a tacky, non-slip feel. They are fuller in thickness and more bulky at the top as compared with standard factory stocks. Very probably they will be much appreciated by big-paw or long-finger shooters, but as issued we find them unsuitable for our own hand. However, the cost is moderate, the material is easily reshaped and we expect to like these grips after dressing them down.

Smoothie is a thin graphite lubricant distinguished by an abnormally large proportion of the finest graphite and a new sperm-oil base. We have tried it in several gun actions and it seems to be smoother or more slick than anything so far tried. A large tube costs 40 cents. It is marketed by Floyd Hartman, 212 Franklin Street, Buffalo, New York.

Dust Caps of rubber for Weaver scopes are now available. Bill Weaver who sent them in said he is "emerging from the confusion of moving" and that now better service on scope orders is possible on account of greater space and better facilities. He also tells how the S-type mount will stand hard bumps. It is inadvisable to try this, of course, because the Weaver mount will bend, but should it happen the mount can be straightened and used again.

Mason Gun-Action Cleaning Brush is a small double-end semi-soft bristle brush sold at 35 cents by Andrew W. Jackson (Bar Bell Co.) of Springfield, New Jersey. With a good solvent, such as Hoppe's No. 9, on the little brush awkward spots in gun actions can be easily cleaned. The two-end brush means double life, or one end may be left dry for wiping. The idea is a good one.

Roberts Micrometer is a neat special-micrometer for accurately gauging elevations of front sights. It is designed for adjusting handgun sights. A non-metal V-block for fitting the bottom of any barrel replaces the usual zero-stop-screw, but otherwise it is a regular micrometer-caliper and with it very fine changes in elevation are possible. We found it necessary to get and keep the V-block in proper contact with the barrel and to maintain a uniform angle and meeting point on the sight post to avoid variable results.

However, this can be done by learning the proper technique of application, which is to grasp the barrel (in vertical position) and push the V-block of the mike (in horizontal position) against its bottom with the thumb of the same hand. This provides a right-angle rest for the micrometer and leaves the other hand free for turning the screw. There is no question about the accuracy of this outfit. I think it is unnecessarily accurate unless it is to be used also for other purposes in addition to correcting handgun elevations. It makes a cheap "mike" at \$3.50. It is offered by R. L. Roberts, 423 N. Victoria Street, Mishawaka, Indiana.

A Cushion Rubber Sling Pad for an arm loop is offered by The Post, 914 South 11th Street, Milwaukee, Wisconsin. We have fitted it to one of our slings and have used it regularly in our shooting because we like it. It is faced with leather slotted to receive the sling strap. Its thick rubber is as soft, yielding and comfortable as sheepskin, but much neater. The price will be in the neighborhood of a half-dollar.

Mike Ljutic of Richmond, California, who puts up a "Star-stocked" prize-gun or two each year out there for the matches, does the most remodelling on the M-1917 military rifle for the least money of any we have ever seen. For a year or two we had here at N. R. A. headquarters one of his \$35.00 jobs on the M-1917. This included grinding, refinishing, bluing, sporting sights, fore and aft, and a Star stock of California black walnut.

It had a full-length stock, to the muzzle of the 22-inch barrel, and a smoothened action admirably well adapted for rapid-fire shooting. It was a sweet job for totting through the woods in hilly country and especially fine for quick offhand shooting. In short, it was about the best M-1917 deer gun we had handled, and most visitors who picked it up reached the same conclusion.

The new Star-stock sporter which recently replaced that Mannlicher-type one is a combination M-1917 for target-practice and hunting. It has the characteristic, brass butt plate which we think is very attractive on Star stocks because of its harmonizing yellow. This big butt plate while somewhat heavy is well-shaped and checkered for utility purposes too. All Star stocks have a five-point, trade-mark star of contrasting wood or light pyralin inlaid in the center of the cheek piece. Mike said he grew that walnut in his back yard, but I suspect it grew there itself and he simply inherited it and utilized its wood. This new stock while not oil-rubbed is beautifully finished and very well fitted, the action is smooth and the rifle holds particularly well in the standing position.

It has some very good fine checkering

at both gripping places, but we think Mike tried to get too fancy on this one and botched the job. Tastes vary greatly, of course, and ours does not allow us to appreciate the flourishes added to the decorations of this rifle. We would like it better with plain checkering in a wider pattern and without the plastic forestock tip and pistol-grip cap of silk-shirt pink!

On the range, with F.A. 1933 ammunition and sporting sights, this rifle averaged 6-inch groups for us at 200 yards, which is very, very satisfactory.

N. R. A. 3-Caliber Gauges are made up in combination for .22, .38 Special and .45-caliber bullet holes. It is about 2 $\frac{7}{8}$ inches long with a scoring gauge for a .22 hole on one end and another for the .38 Special on the opposite end. Sliding on the shank and in between the other two is a bullet-hole gauge for the .45 A.C.P. It makes a neat, compact unit for the pocket and it is light to carry, being made of aluminum. We have carried one for nearly a year and have found need of it on a number of occasions. The price is \$1.25.

Crosman Super-Pell is an improved skirted pellet for air rifles. We tried them only in .22 caliber, and found them to be very uniform. The Crosman Arms Company developed the Super-Pell because imported British and German pellets did not perform satisfactorily in the Crosman Pneumatic .22 which is a repeating air rifle. Because the rifle came while we were engaged with Camp Perry duties Barr had to do all our test-shooting in one day. We found the Crosman to be one of the best arms of its kind in handling qualities, in power and in accuracy. The pull, however, had an annoying creep, which served to enlarge some of our groups.

The Super-Pell has a smoother surface and a rounder nose as compared with imported pellets. They fed through the Crosman magazine very reliably. From a half-dozen strokes of its compression lever the Crosman developed sufficient power to send the Super-Pell through sides of tin cans at a range of a few feet. At 50 feet the pellets buried themselves to their bases in pine boards. At 75 feet they penetrated half their length but invariably rebounded. When this happened at 50 feet they came back with sufficient force to strike the shooter.

Our zero was about $\frac{1}{2}$ -inch above aim at 50 feet, obtained by using six strokes of the compression lever for each shot. This made the impact .45 to .50 inch above aim. Eight strokes gave an impact of .60 inch above aim. Ten strokes made it group .80 to 1 inch high. Twelve to fifteen strokes raised the impact, or to 1.05 to 1.10 inches above aim. Four strokes dropped the impact about 2 inches at 50 feet, or to 1.05 inches below aim.

At 25 yards twelve strokes made the impact 1.10 inches above aim, and gave

a good 10-shot group of 1.58 inches from prone position. A variable compression of six to fifteen strokes dropped the impact to 1.70 inches below aim at 25 yards, and made a sitting group of 3.40 inches. At 50 feet the same conditions gave a 10-shot group of 1.88 inches. Ten-shot groups from standing at this range ran: 1.14, 1.30 and 1.48 inches.

To learn the effect on accuracy we tried different degrees of compression and fired a series of 10-shot groups at 50 feet from the sitting position. Six strokes made a group of 1.17 inches. Eight strokes, .50 inch. Ten strokes, 1.12 and .90 inch. Fifteen strokes, .60 inch. That is an average of .86 inch for 50 shots and 490 strokes of the compression lever. Fortunately that Crosman lever is far more easily operated than is the compression effected in some of its contemporaries.

As compared with other air guns we had tried this one showed surprising power. Ten to fifteen strokes would send a Super-Pell through both sides of a tin can at fifteen feet. Out of five trials a heavy paint bucket was twice penetrated, once even bulging the opposite side. These heavy targets when merely dented were invariably knocked over or off their supports by the tiny, 16-grain pellet. These pellets have a skirt diameter up to .228 inch for an effective bore seal which accounts in part for the force indicated by our tests. In pine boards they flatten out considerably, thus accounting for the shallow penetration obtained in such material.

A Set Trigger which has its p'intas has arrived from J. R. Adriance, Lounsbury, New York. It is made of the best grade of Syracuse carbon steel and should hold up because it is quite simple in design. The forward trigger or lever is reversed in curve to conform with the front curve of the trigger guard, thus leaving maximum room for the shooter's finger. This is the set lever which carries the knocker as an integral part. There is a slot in the knocker for engaging the hook sear of the trigger proper, which latter remains in normal rearward position to maintain the regular reach and familiar position of any military trigger. That is point number two.

A push forward on the forward lever engages the knocker on the sear, thus cocking the rear trigger, which can then be released by a touch. A small screw behind the trigger makes the let-off weight adjustable. The knocker, when released, flies upward and does the job of disengaging the cocking nose of the striker. It is made for all Mauser-type actions. Loop wire springs permit a flat compact construction. The whole is built into a unit on a trigger plate, and the rifle can be readily changed back to military pull in the fall for that big game hunt, or for military target shooting.

Like other set triggers the set can be taken off after cocking by holding the set lever and pulling back on the regular trigger. The set trigger is useful for bench-rest testing, for offhand target shooting and for that kind of pest, varmint and small-game shooting which is akin to target work and is in reality applied target shooting. In the woods, however, and on any hunt where game is driven or flushed I distrust the set trigger and the hunter who has it. This Adriance device demands consistency in its operation because when it is installed the set must be used or the gun cannot be fired except by an inconvenient and impractical pull-back of the set lever.

A point in favor of this set trigger is that the maker needs only the trigger guard and sear of the rifle for fitting. This will appeal particularly to distant customers. It is made for the Springfield, M-1917, M-30 Remington and Mauser at \$4.50; also for the M-54 Winchester and Krag at \$7.50. Mr. Adriance tests each outfit in one of his own actions using the customer's sear. No alteration of the contact-angle or over-lap of the sear is necessary or desirable, because the most that is ever needed is a honing or smoothing of the bearing parts.

The one we tried was on the M-54 Winchester in .22 Hornet caliber. In this action the Adriance set trigger is intact as a unit when installed and when removed. On Mauser actions it must be taken apart for removal, because the two pivot pins are put through the trigger guard and must be driven out before the device can be dismounted. The one we have could be installed in any M-54 action by adjusting the sear and trigger guard. We like this set trigger because it is one of the quickest as well as the most simple one we have seen.

Primer-Pocket Cleaning has become an important chore since the use of non-corrosive primers has become common. The hard flaky deposit made by modern primers in the bottoms of case pockets is not easily removed. It is accumulative and must be removed after each firing to keep uniform the depth and condition of the pocket. The best hand method we had developed was to use a screw driver, properly fitted to the pocket, and scrape them clean.

The very best stunt we developed was to grind down a Belding & Mull push tip, which is left round and smooth on both sides, and use it in a breast drill held in our bench vise. While good, this method is not faultless, because pocket bottoms are not even and only the high spots are reached. A brush is necessary for reaching the entire surface of tilted pocket bottoms, but none of the power brushes we tried would quite fill the bill. Bristles and abrasives endanger the side walls of

the pocket, as the hole must never be enlarged and the side walls must be kept parallel and uniform to ensure a good fit and perfect gas seal for the primer.

Here, Lawrence Wesnitzer, of bullet-spinner fame, enters the picture with his primer-pocket cleaner. This is a pocket-fitting wire brush on the end of a 4-inch shank. Around the brush-end is a cage which serves as a guide for the case and for the brush. The recess fits the head of the cartridge case when ordered by caliber. The brush guide fits the brush and both correspond in diameter to the primer-pocket, large or small, according to the size ordered. The shank fits the chuck of a lathe, electric motor, drill press or breast drill, and the device does its job well and conveniently when turned by any of these various means. The cage, under tension of its coil spring, is held flush with the end of the round wire brush until pressure is applied by thrusting the fouled case against it.

When we first tried it we fell for it at once. However, the relatively fine and soft wire yielded too readily and the brushes became battered or bent after cleaning only fifty .220 Swift pockets. An appeal to Wesnitzer, out in San Jose, California, soon brought relief in the form of improved brushes, made of heavier and tougher stainless-steel wire. The diameter was increased from .010 inch to .016 and .020 inch.

These new stainless-steel brushes have our endorsement. We cleaned a hundred case pockets with both of them and they remained like new. Since the .015-inch size proved amply durable we recommend it, because it seemed to do its cleaning job better than the larger .020 size. Every reloader should have a supply of these Wesnitzer primer-pocket cleaners. Thus far we have used ours in a small breast drill, held horizontally in our bench vise, and we have discontinued all other pocket-cleaning methods.

The Ranger Match Rifle, offered by Sears Roebuck at less than \$20.00 complete, is made cheap only where performance is not affected. There is no question about the handling qualities and accuracy of these rifles, and the design and furnishings are well adapted for target training and even for competitive shooting. Every report which came in merely added to the evidence of an accuracy standard adequate for scoring possibles on N. R. A. targets. This was easy to understand when I learned from Mr. R. S. Burke that every one of these rifles, before acceptance, must make a 5-shot group of less than an inch at 50 yards.

The same thing can be said of its holding qualities. The first time I tried it prone I purposely chose rough and rocky ground and lay down without a mat or

ground cloth. The discomfort to my elbows caused several wild shots, but even these fliers touched the .89-inch circle of the ten-ring at fifty yards and the normal groups cut ragged holes within the total groups. Using the iron sights and shooting prone at 100 yards our average score was 97 and our average 10-shot group for fifty shots with two loads was just over 2½ inches. That included two fliers which enlarged one group 1.15 inch and another group ½ inch. Without those two shots, our 50-shot average from prone would have been exactly 2¼ inches at 100 yards. I believe that speaks well of its holding qualities and its equipment.

I believe the sample sent down by Larry Nuesslein was the Model-420 Ranger. It has an action very similar to that of the 056 Buckhorn Stevens; perhaps these rifles are made by Savage. The stock is the same as that of the Model 19 N. R. A. Savage. The barrel is longer and heavier than the Savage target barrel and the whole gun is appreciably heavier than the Savage target rifle. This makes the Ranger steadier in offhand positions. Its 26 inch barrel, 1⅝ inch at the breech and tapered to ¾ inch at the muzzle, is apparently not a part of the receiver as are the integral Savage M-19 barrels. The clip magazine and loading port are a bit more forward than on the M-19 Savage. The trigger pull is clean and the striker is headless. The striker travel is short, being under ¾ inch.

Two sets of sights came with the rifle. There was a blade front and a 17-A Lyman. One receiver sight was like the Savage No. 15 peep with a special heavy base to fit the left side of the receiver. The other was a special Lyman receiver sight. Both were target-type, "click" sights conveniently adjustable in both planes. The Lyman sight was neater and lower as to projections but less rigid, and of the two we preferred the special-base Savage type which we found more rigid than the standard Savage No. 10 or No. 15.

With the factory sights at 50 yards we got ½-minute clicks, six per complete revolution. Our ten-shot average with Super Match was .83 inch; with Klean-bore, .88 and with Federal-XL, 1.15 inches. With Lyman receiver and 17-A aperture sights we got ¼-minute clicks, twelve per complete revolution. Our 10-shot averages were: Super Match, .88 inch; Klean-bore, 1.09 inch; Federal-XL, 1.92 inches and Precision, .84 inch. With the 1¼-inch Unertl 10X scope we shot a box each of three different loads. The 10-shot averages were: Super Match, .65 inch; Precision, .74 inch and Peters Hi-Velocity, .98 inch.

The foregoing makes a rather remarkable record for a low-price match rifle and bears out Sears' claim of less-than-

an-inch accuracy at 50 yards. Using all types and several brands of ammunition with three completely different sets of sights, we find an average of .89 inch (ten-ring size) for 340 shots at 50 yards. That is the average center-to-center measurement of each 10-shot group. The average inside scoring-diameter per ten shots was only .67 inch. Verily, that Sears Ranger is the best twenty-dollars worth of match rifle we have tried to date.

A New Front Sight by Vaver has come in from the Wittek Mfg. Co., of Chicago. The hood seems to be twice as wide as those of conventional target sights. This, of course, greatly lessens the danger of losing a match from shooting on the wrong target. Three ribs inside the big solid hood support, in its exact center, a threaded receptacle for interchangeable apertures. Four apertures come with each sight, conveniently mounted on a metal plate and in diameters of .093, .110, .120 and .156 inch. The complete assembly also includes two large-size shades, one of them twice as long as the other. These can be interchanged or reversed, front to rear. Also the sight can be purchased without either shade or with only one shade.

I tried the .110-inch aperture from prone position using Precision AZ34-BB in my heavy-barrel 52 Winchester. On account of the vertical rib, cant was easily avoided or kept uniform. To my surprise I got a 10-shot possible. Later I tried the biggest aperture (.156-inch) because the hour was late and the light was fading. This aperture seemed altogether too large for close grouping, but I scored an 8-X 99, which is very good for one who has but little opportunity for practice in prone position or for becoming accustomed to any aperture sight.

Bull's Eye Sight Black is a Gunslik product made by the Outers' Laboratories of Onalaska, Wisconsin. It is a liquid which comes in a small bottle with a brush for an applicator. We have tried it and can endorse it as effective and convenient. A single stroke of the brush leaves the sight face an even dead black.

New Unertl Factory. That very obliging maker of good scopes, John Unertl, now has larger and better facilities for giving prompt service to his customers. The new address of the bigger shop to which he recently moved is: John Unertl, 75A Cemetery Lane, R. D. No. 4, Millvale Branch, Pittsburgh, Pennsylvania.

Wollensak Prism Binocular, an all-American product, is now offered in 8 x 30 optics by the Wollensak Optical Co., of Rochester, N. Y. This small, practical, 18-ounce glass comes in a light, handsome black cowhide case with shoulder straps and neck strap at only \$36.75. It is a good buy for anyone who cannot pay more. Each glass is numbered and recorded for the protection of owners.

The right eye-piece is adjustable for individual focus plus a central focus for both. The instrument is short (4¼ to 4½ inches) and easily carried. We have carried it up the river, on the rifle range and on an all-day woodchuck hunt. We have checked its optics and found them as good as the maker's claims. The shallow eye cups, designed for spectacle-wearers, and the wide (17-mm.) eye lenses caused us some annoyance, because we found it necessary to get close and then our eye lashes smeared the lenses which called for frequent wiping.

Questions and Answers

Letters of shooting questions for this department should be mailed four to six weeks early, as circumstances often require a month's delay in reply. The facilities of the Technical Division have been improved, but the constant demands on its service have multiplied in all phases of the work of which answering Dope Bag letters is only a part. Impatient members are therefore asked to anticipate a month's delay by sending their questions five or six weeks early instead of writing follow-ups each week which merely serve to increase the load and to increase the necessary and reasonable delay of one month.

CHEAP LOADS FOR THE .250 SAVAGE AND .257 ROBERTS

A NUMBER of inexpensive bullets are available to the reloader of various .25 caliber cartridges although the ultimate choice of one or more may depend on the groove diameter of his rifle and the particular result he wishes to attain. Bullets made by different manufacturers may vary one or two or more ten thousandths of an inch in diameter although classed as .25 caliber, and strange as it may seem there is sometimes a decided lack of uniformity of diameters in bullets of the same make as shown by careful micrometer measurements. While the variation of two or three ten thousandths of an inch may make little or no difference for most purposes it gives a reloader a feeling of satisfaction, nevertheless, after he has taken the best of precautions in resizing his cases, expanding the necks, seating the primers and measuring the powder, to know that his bullets are also uniform or very, very nearly so.

It has been said, and is probably true, that Western and Remington make the best bullets. The reloader for the .250 Savage and the .257 Roberts has his choice of the expensive .250 Savage and .257 Roberts bullets which list at \$2.70 per hundred or of selecting a bullet made for another cartridge which costs less and which may prove entirely satisfactory. The Remington Arms Company sell at 90¢ per hundred the .25-20 hollow-point Hi-Speed 60-grain bullet (diameter .257"), the .25-20 soft-point 86-grain (.2575"), the .25 Remington Hi-Speed mushroom 87-grain (.2575"), the .25 Remington metal cased pointed 101-grain (.2573"), and the .25-36 Marlin soft-point 117-grain (.2574"). The .25-35 bullets come in 87-grain weight (.255") and in 117-grain, soft-point and mushroom (.255" and .2568" respectively). Curiously enough the .250 Savage bullets in 87-grain weight vary from .25635" to .2565". The .257 Roberts series are very uniform in weight and diameter; the 87-grain bullet measures .257"; the 100-grain bullet, .2567" and the 117-grain open point .2568".

Two very good loads for the .250 Savage were, in my case, 34 grains of No. 17½ behind the .25-20 soft point 86-grain bullet and 16 grains of No. 80 behind the .25-20 Hi-Speed 60-grain bullet. The elevation for both these loads was the same. In the model-45 Savage it was very necessary, however, to keep within these limits or the shells would begin to stick in the chamber. Another very good short-range load for birds and squirrels was the pointed Ideal No. 257388 bullet without the gas-check and propelled by 8 grains of No. 80. More elevation was needed for this load than for the first two.

The bore of my .257 Winchester Model-54 measures .2565". For this rifle either 41 grains of IMR 1185 or 26¼ grains of Lightning behind the .25 Remington 87-grain bullet seems to work best. When using these loads or the 117-grain .25-36 Marlin soft-point bullet with 26 grains of Lightning or the 60-grain .25-20 Hi-Speed bullet with 18 grains of No. 80 the elevation required at 100 yards is the same. Any of these loads will group very closely and they will do anything to a woodchuck but make him sit up. The .25 Remington bullet is not as destructive to the tissues of a chuck as is the .25-20 soft-point, but it is equally effective in anchoring him. There is a lot of pleasure in working up a good load for one's pet rifle; it is gratifying to know that such loads may be inexpensive and it is quite satisfying to make a clean kill at 200 yards with a home-grown hull; hence these notes to others who like to roll their own.—SHELDON E. BRINK.

SIGHT PROBLEM

I HAVE a .35 Remington Model-14 Hi-Power rifle, and I do not like the sights on this gun; the rear sight is hard to line up. What sight would you suggest? I use this gun for deer hunting in heavy forest and can't line sights quickly enough.

What do you think of a Lyman No. 1A or a Marbles peep sight? Would the iron sight on the gun have to be taken off the barrel? This gun is used only for hunting, not for target shooting. I use 200-grain bullets. The trouble with the rear sight is the notch is very narrow and it takes time to line up. By that time the game is gone.—S. H.

Answer: Once you have become accustomed to its use you will find the large aperture near the eye to be the quickest and most accurate hunting sight for your Model-14 Remington rifle. I would not recommend the tang sight if it comes too near your eye, because recoil will cause it to bump your eye, perhaps dangerously. The receiver sight, like the Model-56 Lyman micrometer, or the tang sight which occupies approximately the same position on the receiver would be admirably well adapted, when the disc or aperture is removed and the stem-hole is used alone.

The next best sight would be a flat bar like the Lyman No. 6 leaf sight having a white triangle for alignment. This works very well with a silver, white or red front sight. The eye will naturally center the bead on a straight bar without the white triangle and you will find either form very accurate for practical shooting and much faster than any other form of open sight. The rear sight must be removed when a receiver or tang peep sight is used, but the No. 6 Lyman leaf sight can be left in the barrel slot, because it is made to fold flat, out of the way of the aperture sight. I would suggest that you have your gun equipped with both these sights which will give you an opportunity of trying our suggestion both ways.

HANDLOADING THE .25-20

SOME time ago you advised me about the loading of my .25-20 cartridges, but the results are still not satisfactory. The details of loading and so forth are as follows:

Stevens Ideal .25-20 singleshots; 26-inch barrel; weight about 7½ pounds; barrel in perfect condition; no pits or rust. Sights—peep rear and bead front.

I reload my own shells as follows: Bullet: M. Bond—86 grains—1 part tin to 10 parts lead—have also used the 61-grain bullet with no better results. Powder: Dupont No. 80.

I measure the powder. I had 6 grains weighed out and I measure an equal bulk in a cut-off cartridge, carefully dropping each charge the same distance and scraping off the excess. I know weighing is better but I have known many shooters of the heavy .32-40 target rifles to measure their powder and get good results. After dipping the bullets in grease I size them with the sizer on an Ideal No. 4 Combination Tool. On top of the powder I put enough cornmeal to reach the base of the bullet. The bullet is then inserted so that the grooves are covered and it is not crimped. The shell is first sized to give a perfect sliding fit with the base of the bullet.

The grouping is very disappointing though the cartridge is a good killer on woodchucks—four-inch groups at fifty yards is about average and I am a better than average shot. Can you suggest anything to improve the shooting?

A gunsmith told me he could convert this rifle into a .22 Hornet; he called it "Parker-rifling." Would you advise having this done? His price was \$18.00. What does this converting operation consist of?—W. A. H.

Answer: You are evidently doing something wrong in reloading that .25-20 single shot. Perhaps you improperly size your bullets and it would be better to use them without sizing than to use your present equipment which might cause an out-of-round or imperfect condition. With smokeless powder they should be approximately .0015 inch larger than the groove diameter of the barrel in which they are used. You should seat them in the case friction tight by sizing the case neck with an expanding plug the same diameter as the bullet size. Then chamfer the shell mouth or bell it slightly to avoid shaving the bullet in seating. No crimp is required and I note you have left it off. Seat the bullet out so that it just touches the lands in the throat when the action is closed, and seat them all alike.

Your powder charge is probably uniform although even with care you can vary as much as one-quarter grain and that is pretty much for No. 80 powder. Your charge is about right for this cartridge and the 86-grain bullet, but you should not use a filler as that makes an excessive load and very probably affects the accuracy. Use the powder alone and start with 4 grains and work up towards 6.5 grains in one-half grain steps. The maximum load of No. 80 behind the 87-grain bullet without a filler is 6.8 grains weight with old style corrosive primers. If you use modern noncorrosive primers this load is still heavier. 6.5 grains weight would be equivalent with the new primers.

You might weigh your bullets and segregate them in lots if you find that the density is not uniform. This would also indicate that very light bullets have air pockets or bubbles or light spots which would throw them off center and make them unstable. If you want

to check definitely against the bullet get some cheap jacketed bullets or factory, lead, plated bullets and use them in the same weight and same charges for direct comparison.

Your rifle would not be adapted for the .22 Hornet unless your action is of the 44½ type rather than the 44 type. The 44½ type have sliding side blocks which slide in vertical grooves inside the receiver and extend below the receiver to be plainly visible when the action is open. If your action is suitable then you could have it converted into the .22 Hornet by Parker-rifling. This consists of a rifled tube inserted and secured in your barrel after it has been properly bored out for the Parker tube. It is then chambered for the .22 Hornet and the extractor fitted and the firing pin and block adjusted.

MUZZLE ZERO FOR 300 YARDS

I HAVE a Mauser action rebarreled for .30-'06 by Sedgley with 4X Zeiss Zielvier scope, Redfield mounts with tapered flat top post. My scope sets exactly 1½ inches above the bore. What I would like to know is how can I sight this outfit in for 300 yards, using 150-grain Remington Bronze Point?

Is there a distance, let's say 50 yards, where my bullet crosses my line of sight? Can I sight in at 50 yards and hold same place and hit 300 yards? I use the Remington Bronze Point bullet at 3000 feet.

I want to sight in at a close distance to hit point blank because it is much easier to sight in at a close range. I have been trying to sight in at 300 yards and it's pretty hard to do this if a fellow don't know what it's all about.—J. B. H.

Answer: You can sight in your .30-'06 Mauser at short range providing you have established its absolute zero as a starting point. This must be found for every rifle and it is done by zeroing on the range. When you have to establish a definite zero for adding your elevation adjustments, you must know the angle of departure by actual firing as this is not necessarily in agreement with the angle of elevation and it varies with the individual rifle. In order to determine the absolute zero choose a short range and for convenience in determining minutes of angle I would suggest 12½ yards, exactly, from the muzzle. Now if your scope sight is 1½ inches above the bore axis draw a line exactly 1½ inches below your aiming point and adjust your sight so that your group forms 1½ inches below the point of aim. You will then have your absolute zero or starting point. Your 150-grain bullet at 3000 f.-s. requires 6.5 minutes of angle at 300 yards. You will, therefore, elevate 6.5 minutes of angle. At 12½ yards a minute is worth roughly ⅛ inch. You will, therefore, get your group to shoot 13/16 inch above the 12½-yard impact or absolute zero.

It should then shoot right on the point of aim at 300 yards. 5 inches high at 200 yards and 4½ inches high at 100 yards.

If you try it let me know how it works out. Because your impact will change from day to day you should do it over several times to strike an average. Because you are working with such small dimensions at short range, you will have to be very careful about it as it is easy to make mistakes, because out at 300 yards ⅛ inch is worth slightly more than 3 inches. Therefore, you should at the first opportunity shoot a series of groups on different days at 300 yards to get your average zero refined, corrected or exactly adjusted.

LOADING TROUBLE AND RIFLE PARTS

I HAVE been a member of the N. R. A. and have read *THE AMERICAN RIFLEMAN* and *Arms and The Man* for a good many years. I have the handbooks of the loading-tool makers, also Mattern's "Handloading Ammunition," and have loaded rifle ammunition from .25-20 to .45-70, including Krag and Springfield .30-'06, with results that have been satisfactory to me.

But in trying to load ammunition for my Smith & Wesson 32-caliber Hand Ejector (.32 S. & W. long cartridge) and for my Smith & Wesson .45-caliber Model 1917 Auto Rim, I am having ignition trouble. Both guns will shoot factory ammunition satisfactorily. I am trying to use du Pont Pistol Powder No. 5. Recommended canister charges make a very weak shooting cartridge. The gun does not feel right in my hand when fired and the bullet will not penetrate over 1 inch of yellow pine. In the .32 Hand Ejector, 6-inch barrel, I used Western No. 1½ improved noncorrosive primers, also Winchester No. 108 nonmercuric primers (no difference could be noted in the performance of these primers), powder charge 2.6 grains No. 5, bullet Ideal 31357 cast lead 16 to tin 1. When fired, this charge felt about like a .22 L.R. and the shell, forward part of cylinder and the entire length of the barrel were thickly coated with unburned powder. The bullet would just about bury itself in a pine board.

I do not know the groove diameter of this barrel, the odd number of grooves makes it difficult to measure, but, from investigations made, I am sure the bullet was large enough and the bullet when placed in the forward part of the cylinder would shut off practically all light but pushed through easily. I could not see anything wrong with my loading. Primers were seated to the bottom of the pocket, but were not mutilated by heavy pressure, and the shells were well crimped. So to make the powder burn better, I began increasing the weight of the charge by .1 grain steps. Three and five-tenths grains of this powder made the gun feel right when discharged and gave a penetration of 3¾ inches in pine, but there was still some unburned powder. Then, after all this experimenting, I did not dare use the load because I did not like to think of what might happen with that heavy overload of powder if, for some unknown reason, I should get one cartridge with normal ignition.

My experience with the .45 was the same thing over again. I bought this gun through the D. C. M. and the gun is in excellent condition both inside and out. The diameter of a soft lead slug pushed through this barrel is .450. I sized the bullets .451. The bullet was Bond C-452—220 grains. The final load I tried with this gun was this 220-grain bullet cast of a mixture of lead 90—tin 5—antimony 5, 6.8 grains of No. 5 powder, Remington Auto Rim shell primed with Remington U. M. C. No. 2½ nicked primers, nonmercuric. This load just got through four ¾" boards, and there were a few flakes of unburned powder. The only suspicion I have as to where the trouble might be is to wonder if I could have gotten hold of a can of deteriorated powder. I should be very glad if you can set me straight on this loading proposition.

Also I have a Springfield Sporter. As you know, the manufacture of this rifle has been discontinued. I have never had any trouble of any kind with this rifle, but would like to know if any of the component parts peculiar

to this model are considered to be susceptible to breakage.—W.J.P.

Answer: The Springfield parts most likely to need replacement, and which you can buy as extras to keep on hand for your Springfield Sporter are a *bolt stop*, which is worn by continual contact with the bolt, in rapid-fire especially. The *cocking piece*, as the cocking piece nose is sometimes worn from failure to keep it properly lubricated. Fine Sperm Oil frequently replenished is often used for this, but a better modern method is to use Gun Slick sparingly but continuously until a permanent lubrication is built up in the so-called "pores" of the metal. The *lower band swivel* and screw, because sometimes the rivet works loose and the swivel is lost. The *safety lock*, because the thumb piece can be knocked off by a blow or accident. The *striker*, because the point is sometimes burned by a defective cartridge or a punctured primer which allows gas to come back, and it is sometimes broken at the joint hole by snapping with the chamber empty. Of course the stock is also vulnerable from bruises, cuts, scratches, chipping, etc., and it is sometimes broken at its weakest point, which is the small of the grip.

I was surprised to learn of your trouble with reloading for the .45 Auto Rim revolver and for the .32 S. & W. Long revolver. In both cases I believe you are using bullets too small. By all means slug the barrel for groove diameter and use your bullet at least .002-inch larger. In the .32 S. & W. Long caliber particularly, I have noticed that the chambers are often entirely too large for the cartridge, or in other words there is too much clearance, and this would reduce pressures and produce exactly the results which you describe unless you use an oversize bullet. In the .45 Auto Rim barrel I have used bullets as large as .456-inch and always use them at least .453-inch diameter. Handgun bullets should be seated right depth in friction-tight necks and the shell-mouth crimped into the proper groove.

ON HUNTING SCOPES

I WOULD like to have your advice on the subject of rifle telescopes. I recently purchased an Enfield M-1917 from the government and am desirous of equipping it with a decent scope sight, not the most expensive thing on the market, but not the cheapest either. I load my own and intend to use this one rifle for all shooting from reduced loads for squirrel to full-power loads for deer. I do not intend to use iron sights at all. The scope I have in mind must be one of 2½ or 3 power mounted very low on the barrel and capable of having its zero changed from that used with a full-power load and then back again with no change in accuracy resulting in the weaker load. And very especially the scope must have good light-gathering power. I have a 4X Weaver on my .22 and it works fine as long as the sun is out, but just let the sun pass behind a cloud and try and see anything with clarity. Out here on the West Coast we have the Noske scopes. What about them? For hunting which is considered best the cross-hair reticle or the sighting post?—F. A. W.

Answer: On your M-1917 action you can use any scope in low position and you need not be limited to the Noske scope and its long eye relief. Everything considered I would prefer one of the Zielklein models in Zeiss or Hensoldt make and I would suggest that you have it attached with the Stith graduated bridge-type mounts made by M. L. Stith, 227 Jackson Street, San Antonio,

Texas. A cheaper way out would be to get the improved 330 Weaver scope in Stith mounts. If you wanted a very low-priced practical outfit the very best one is the 29S Weaver with internal click adjustments in both planes and a flat-top aiming post with three magnifications. This outfit in the low-model S-type Weaver mount costs only \$12.00.

On the other hand, if you did not mind going into more money, you could get what you are seeking in the bigger 4X Zielvier scopes of Zeiss or Hensoldt make. In this case have it mounted in low position with a double-lever Griffin & Howe or Niedner mount, or have it mounted by the Hart Arms Company, 2185 E. 2nd Street, Cleveland, Ohio. Also with any of these three mounts have graduations in minute of angles and have the graduations on the elevation boss of the scope also in minute of angle units.

ON BOOSTERS AND FILLERS

MAY I have some information on the use of Pyro D. G. in reduced loads in .30-30?

I had noticed in the Ideal Handbook that a mixture of two powders usually burns at the rate of the faster one rather than at that of the slower. At the end of the chapter or tabulation of data in Mattern's "Hand-loading" the use of a few grains of Fg black powder as a booster charge is mentioned in a note on the results of tests of a certain German cartridge.

In view of this, I loaded twenty cartridges with 20 grains of Pyro and the 165-grain gas-check, Lyman No. 308291. To ten of these I added a small amount of Fg black powder. They were fired alternately, at two different targets, to assure identical firing conditions. Both left unburned grains of Pyro in the barrel, neither had any tendency to lead the barrel, nor was there any black-powder fouling. At 100 yards the extreme spread of the plain Pyro was nearly five inches, while with the black-powder booster it was nearly four inches—both rather awful, but showing some improvement with the booster.

The gun is a Winchester 54 with a 48W rear sight and a Redfield No. 65 globe front sight on a medium height, long ramp—one of Mr. J. V. Howe's nicest.

The test, though fired from rest, might have shown a bit better had I not crimped the cases. This was done to prevent the bullets from receding into the cases (I had lapped out the mould so that the forward, cylindrical, bore-riding section of the bullets is a very tight push fit in the barrel).

What weights or what proportion of black and Pyro will give the best results at a bullet speed somewhat under 1800 f.-s. with a 165-grain bullet?

Where should the black powder be placed? Next to the primer to act as a priming charge? Mixed all through the Pyro to assure rather complete combustion? Or on top of the Pyro, so that the violent wallop that is characteristic of a black-powder explosion might act as would a sharper shoulder at the neck of the shell to turn the Pyro gases back upon themselves and in that way assure a more complete and uniform combustion? In connection with this I should say that I plug the cartridge with a small wad of paper, rammed down, so that the powders "stay put" as loaded. I intend also to seat the bullet in the one ahead of the cartridge; this will eliminate "jump."

I would be very grateful for any information or words of warning; especially the

warnings, as I wish to continue experimenting with this combination.—J. H. B.

Answer: I would recommend against using the paper wad unless you leave an air space and merely put it in the neck of the case and then a graphite wad would be better. These graphite wads are furnished by R. B. Sisk, Iowa Park, Texas, and by Industrial Products Company, 146 Sumner Street, Boston, Massachusetts. I would also suggest with your 20-grain load of Pyro D. G. that you fill the shell to the base of the bullet with cream of wheat or corn grits. After using this material you will have to look through the bore after each shot to be sure it clears out. The booster charge is all right and all you will need is 3 grains weight FFFg black powder next to the primer. If this becomes mixed with the powder, it is all right, but I would not recommend using it on top of the powder.

I think all you will need is to leave out the booster and the filler and use a normal load of Pyro D. G. which is 33 to 36 grains weight behind the 165-grain gas-check bullet in the .30-06. Do not use more than 20 grains with the filler or booster, however.

AN M-17 HORNET?

I WOULD like to have your advice on the practicability of building a Hornet on an Enfield action. I have never heard of this being done and would like to know whether or not it could be made to operate as a repeater by adopting the Sedgley Springfield or Winchester magazine.

Also would like your advice as to good barrel of moderate cost. I understand from your articles that you have used a Savage or a Stevens blank on your Stevens No. 44½ Niedner Magnum and would appreciate very much the benefit of your experience with this barrel. Thank you in advance for any light you can pass my way.—B. L. U.

Answer: On any bolt action such as the Model-1903, M-1917 or Krag I would prefer the M1 .22 caliber Springfield barrel or the Model-54 Winchester Hornet barrel for the .22 Hornet or similar cartridge. On any of the single-shot lever-actions I would prefer the Savage heavy barrel at \$9.00 in the interest of economy. Next in order for this purpose would be the Stevens heavy barrel at \$16.00 and finally the best one which is the heavy Hornet blank of Winchester make at \$20.00. However, on a bolt action with one-piece stock these heavy barrels are not necessary and you should get as good or at least practically as good results with the .22 Springfield barrel which costs about \$11.00 to N.R.A. members.

The M-1917 has been made up in the .22 Hornet by R. F. Sedgley, Inc., 2311 N. 16th St., Philadelphia, Pennsylvania, and he can give you a definite quotation on the job both as a single-shot and as a repeater. Personally, I think this action is altogether too long and clumsy to be desirable for the purpose. It is more suitable for the .300 Magnum or one of the other Magnum cartridges.

A GOOD .270-W LOAD

I AM using a Winchester .270 restocked by Linden and have reloaded for the .270 Winchester and .30-06 for some years.

After having reloaded 300 cases for the .270 using 55 grains duPont No. 15½ (all loads carefully weighed) behind the Western Tool & Copper 95-grain open-point bullet

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and Winchester nonmercuric primer No. 120, I have read an article warning against the pressure developed by this particular primer. I have shot around thirty of these loads and while they do not show any excessive pressure signs, I feel that I should have some advice in regard to this particular primer, which, if safe, I would prefer to continue to use.

Sunday, using 8X scope, prone, I dropped six out of eight chucks at ranges from 150 to 254 paces. Three being above 225 paces, I feel that I am getting pretty fair accuracy with the load. The load does not seem to be much affected by wind at ranges mentioned, as quite a stiff breeze was blowing.—H. S. O.

Answer: While you are using a maximum load in your .270 Winchester rifle of 55 grains No. 15½ powder behind the 95-grain Western Tool & Copper Works bullet and the Winchester Staynless No. 120 primer, it is apparently a safe one in your chamber and bore and I do not see any reason for discontinuing its use. The W. R. A. No. 120 primer is the one recommended for use in Frankford Arsenal cases in substitution for the Frankford Arsenal No. 70 primer when a modern non-corrosive primer is wanted. The only thing necessary normally is that when maximum loads are used of a type and load recommended with old-style primers, the charge should be cut 5 per cent. Some chambers and bores and guns will stand the added fuss and fury without this reduction which is normally advisable, however. If you should care to do this you would still have a very potent load with 53 grains No. 15½

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powder behind that bullet in the .270 Winchester. Apparently, however, the load you are now using is all right as it is, for your rifle, although it may not be so for another rifle with a smaller chamber or throat, or less throat erosion. I would say that there is far less danger now in using that load than when you started, because in 300 loads you have certainly increased the throat erosion which would reduce pressures and velocity.

ON MAXIMUM LOADS

I HAVE a N. M. Springfield with a fairly tight chamber and have used hand loads for the past few years with no bad results until yesterday, when a case split in four places about a half-inch from the head and caused gas to blow into my face.

Here is the dope on the load that burst. I have been using Remington cases that were loaded for blanks which I unloaded for the cases. The bullet was the 172-grain B. T. Frankford Arsenal bullet. I used 47 grains of No. 17½ powder. The bullet was seated to the crimping ring. The primer was the Remington No. 8½. The powder was weighed on a Pacific balance.

I have used this load a little with good results. However, this case had been used before. Do you consider the cases I am using good for heavy loads? Am I crowding the safety margin in the following loads?

180 grain Remington jacketed bullet using 48 grains No. 17½

172 grain Remington jacketed bullet using 47 grains No. 17½

165 grain Remington jacketed bullet using 48½ grains No. 17½.

Do you consider it advisable to load the above loads in cases, such as F. A. cases, after using them in light loads, such as 110-grain lead bullet with 8 or 10 grains of No. 80 powder? I do not full-length resize my cases.—J. M. P.

Answer: Even if your Remington No. 8½ primers are of the modern noncorrosive type your loads would not be excessive, although they are of a maximum nature and any small variation might cause increased pressure. Also maximum loads require new cases and I do not believe your cases are good enough for this purpose. You do not say anything about seating depth which is important, because if you exceed the normal seating depth your loads would be excessive with the same powder charge. I also think your load with the 180-grain bullet is ½-grain too much. This bullet should have a seating depth of only .375 inch with a maximum load of 47.5 grains weight No. 17½ powder. The 173-grain 9° boat-tail or M1 Service bullet should not be seated deeper than .475 inch with your load.

WANTS A 20-INCH .30-'06

I AM considering the purchase of a high-power rifle and have chosen the following model on which I would appreciate your comments and advice. Model 54 Winchester, caliber .30-'06, equipped with the 20-inch barrel, micrometer and ramp front sight. Will this rifle prove efficient in hunting such game as bear, moose, Rocky Mountain sheep, and all other game likely to be found in North or South America? What is the maximum killing range, providing you were fortunate enough to hit at that distance? Does the 24-inch barrel have much of an advantage over the 20-inch?

My reason for choosing the 20-inch barrel is that it is easier to handle in the brush and the 4 inches reduction in the length of the barrel will not make enough difference in shooting to compensate for the inconvenience in carrying the gun. Am I justified in this belief?—H. A. B.

Answer: I am sending you a ballistics table and also a circular on the Model-54 Winchester, which will give you an idea as to the effectiveness of the .30-'06 on American game. With suitable loads for the game selected, the full-length rifle should be (at utmost) limited to about 400 yards, and your 20-inch carbine to about 200 yards.

Your 20-inch gun might prove useful in such cover as is afforded in Pennsylvania, but it would not be as good for a general purpose gun. Even in Pennsylvania I have carried the 30-inch Krag rifle without any particular difficulty in the brush. It is my opinion that I would not find a particle of difference between the 20-inch and 24-inch barrel as to handling qualities in the brush, but I would find plenty of difference in favor of a 24-inch when it came to shooting, especially at long range. You will lose a bit of accuracy on account of uneven muzzle velocity as compared with the 24-inch barrel. You will lose considerable accuracy of aim on account of the shorter sighting radius. In addition, you will lose about 100 f.s. muzzle velocity, which will increase the trajectory and make the estimation of range more important. The recoil and muzzle blast will be more unpleasant with the shorter barrel. All in all I would expect your effective range to be nearly cut in half by using a 20-inch barrel with metallic sights. Even a 22-inch barrel would be a great improvement, but the ideal length for a general purpose rifle which must include long-range shooting would be a 26-inch barrel, and I would consider even the standard 24-inch barrel to be a sensible compromise.

ON BORE DESIGNATION

WHAT is the basis or unit of measurement of the bore of a shotgun? Should it be written 12 gauge or .12 gauge?—C.A.H.

Answer: Except in the .410 gauge in which the figure refers to a bore measurement of diameter in inches, all gauges are designated by numerical figures, which refer to the number of round lead balls totalling a pound in weight which fit the bore. Thus, in the 12 gauge it takes a round lead ball to fit the bore of such a size that 12 of these balls total a pound in weight. The 16 bore, being smaller, takes smaller lead balls, so that 16 of them weigh a pound. The 10 gauge, on the other hand, has a larger bore and takes larger lead balls to fit it so that only 10 of these weigh a pound.



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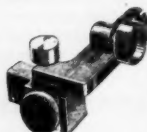
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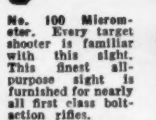


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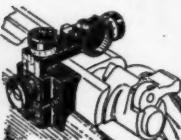
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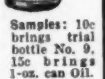
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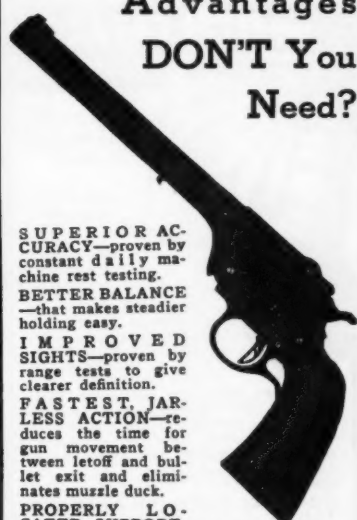
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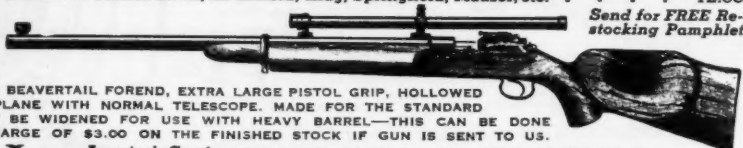
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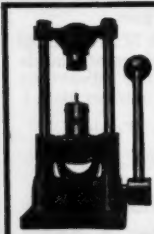
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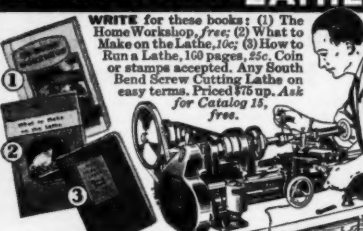
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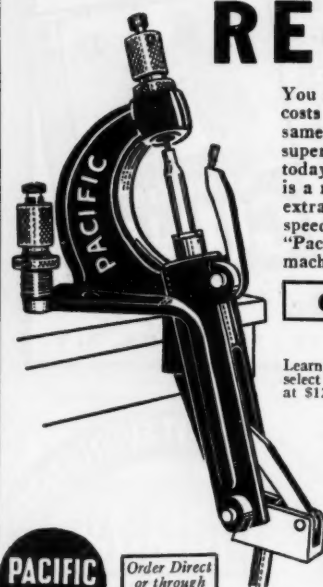
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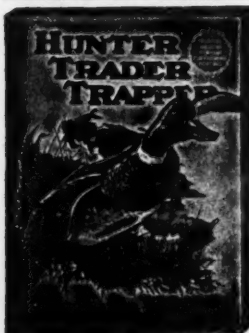
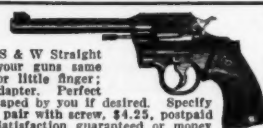
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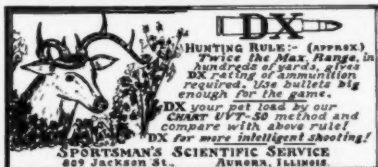
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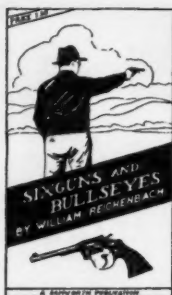
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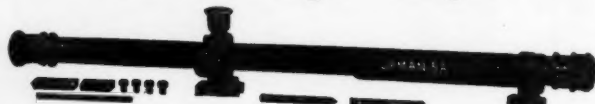
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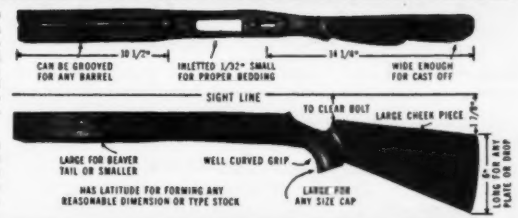
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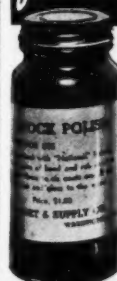
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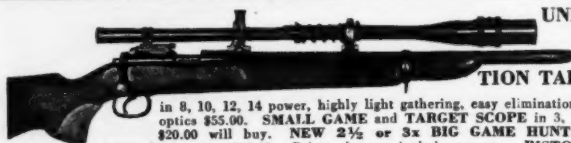
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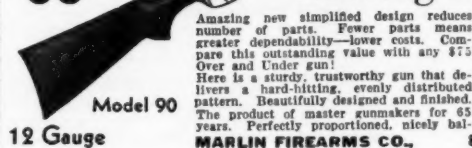
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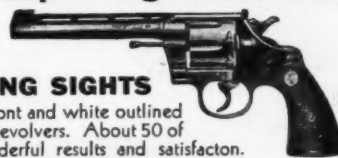
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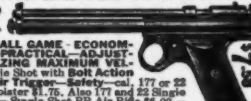
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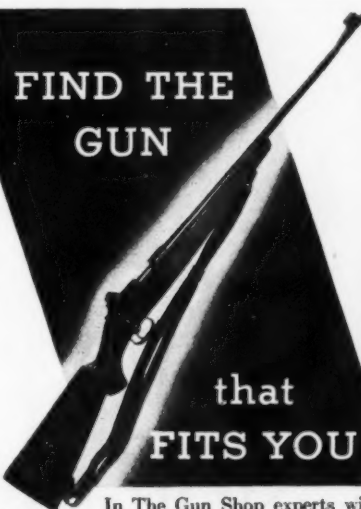
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